LEICA S-E

Die Abbildungen in dieser Anleitung zeigen die Leica S. In Bezug auf Funktionsweise sind beide Modellvarianten identisch. Die Modellvariante Leica S-E unterscheidet sich von dieser durch einige äußere Details und einen anderen Lieferumfang:

– Leica Protection Plan S Body (Bestellnummer: 16033) nicht enthalten
– Leica USB Kabel S (Bestellnummer: 16014) nicht enthalten
– Leica Blitzsynchronkabel S (Bestellnummer: 16031) nicht enthalten

Diese Produkte sind als Zubehör erhältlich.

The figures in this manual show the Leica S. However, in terms of their functioning the two models are identical. The Leica S-E model only differs in terms of a few exterior details and the items supplied:

– Leica Protection Plan S Body (order number: 16033) not included
– Leica USB cable S (order number: 16014) not included
– Leica flash sync cable S (order number: 16031) not included

These products are available as accessories.

Les illustrations de ce mode d'emploi présentent l'appareil Leica S. Le fonctionnement des deux variantes du modèle est identique. Il ne se distingue du modèle Leica S-E que par quelques détails extérieurs et les éléments avec lesquels il est livré:

– Plan de protection de Leica pour boîtier S (réf.: 16033) non inclus
– Câble USB Leica S (réf: 16014) non inclus
– Câble de synchronisation du flash Leica S (réf: 16031) non inclus

Ces produits sont disponibles comme accessoires.

De afbeeldingen in deze gebruiksaanwijzing zijn van de Leica S. Wat hun functioneren betreft, zijn beide modeltypen identiek. Het modeltype Leica S-E verschilt hiervan alleen door enkele uiterlijke details en de leveringsomvang:

– Leica Protection Plan S Body (bestelnummer: 16033) niet meegeleverd
– Leica USB-kabel S (bestelnummer: 16014) niet meegeleverd
– Leica flitssynchronisatiekabel S (bestelnummer: 16031) niet meegeleverd

Deze producten zijn eveneens leverbaar als toebehoren.

Le figure del presente manuale mostrano la Leica S. Per quanto riguarda il funzionamento entrambe le varianti di modello sono identiche. La variante Leica S-E si differenzia dal modello in oggetto per alcuni dettagli esterni e per il materiale in dotazione:

– Leica Protection Plan S Body (cod. ord.: 16033) non incluso
– Cavo USB Leica S (cod. ord.: 16014) non incluso
– Cavo di sincronizzazione flash Leica S (cod. ord.: 16031) non incluso

Questi prodotti sono disponibili come accessori.

Las imágenes de este manual muestran la Leica S. En cuanto al modo de funcionamiento, ambas variantes del modelo son idénticas. La variante del modelo Leica S-E solo se diferencia de esta por algunos detalles externos y por el volumen de suministro:

– Leica Protection Plan S Body (Nº ref.: 16033) no incluido
– Cable USB S Leica (Nº ref.: 16014) no incluido
– Cable de sincronización para flash S Leica (Nº ref.: 16031) no incluido

Estos productos están disponibles como accesorios.

LEICA S-E

此说明书中的插图是徕卡 S。在功能方面，两款衍生型号都完全相同。衍生型号莱卡 S−E 与本款的区别在于一些外部细节和不同的供货范围：

– 不包括徕卡 Protection Plan S Body（订单号：16033）
– 不包括徕卡 USB 连接线 S（订单号：16014）
– 不包括徕卡闪光同步线 S（订单号：16031）

这些产品作为配件可供购买。

本說明書內的圖片展示的是徕卡S。兩種型號的工作原理是相同的。徕卡 S−E 與此機種只在外觀以及出貨內容上有些許差異。

- 徕卡 Protection Plan S Body（S 機體保護方案）（訂購編號：16033）不包含
- 徕卡 USB 線 S（訂購編號：16014）不包含
- 徕卡同步閃光導線 S（訂購編號：16031）不包含

可以作為配件購買這些產品。

本書では、ライカ Sのイラストを使用しています。ライカ S-Eとライカ Sは、仕様は同じですが、一部デザインが異なります。
また、「ライカ S-E」には以下のサービスおよびアクセサリーは付属しません。

- ライカプロテクションプラン　Sボディ（コード番号：16033）
- LEMO® USBケーブルS（コード番号：16014）
- LEMO® シンクロケーブル（コード番号：16031）

これらのサービスおよびアクセサリーは別売りです。

본 설명서에 들어 있는 그림들은 Leica S에 관한 그림들입니다. 두 모델은 기능 면에서 동일합니다. Leica S−E 모델은 외부 디테일과 다음과 같은 한 가지 제공품 범위만 본 제품과 다릅니다.
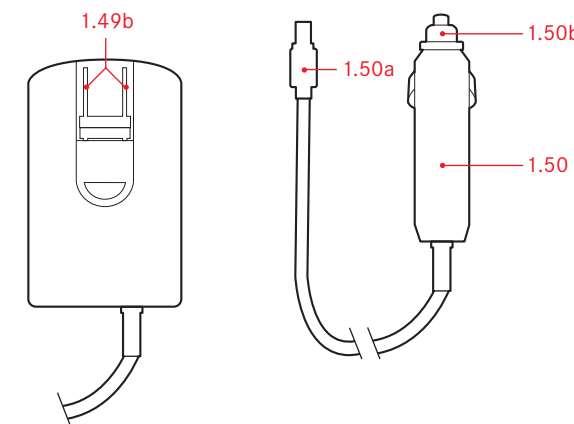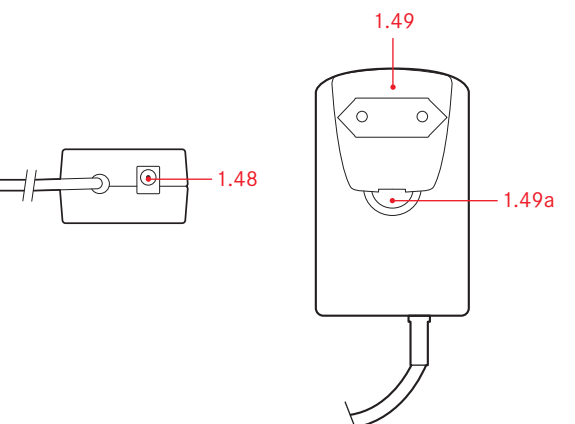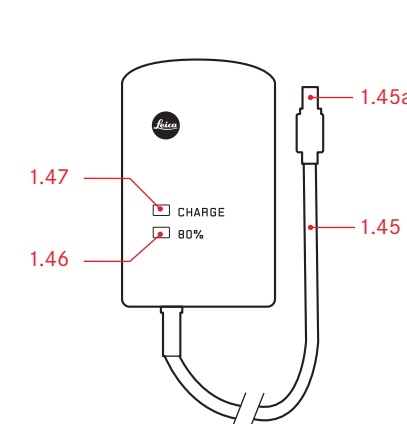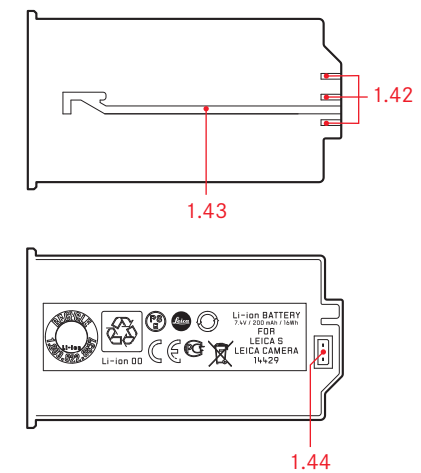
– Leica 보호 플랜 S 바디(주문 번호: 16033) 미포함
– Leica USB 케이블 S(주문 번호: 16014) 미포함
– Leica 플래시 동기화 케이블(주문 번호: 16031) 미포함

이 제품들은 액세서리로 구입할 수 있습니다.

На рисунках, имеющихся в данной инструкции, показан фотоаппарат Leica S. Обе версии модели идентичны по своему принципу действия. Версия модели Leica S-E отличается от этой некоторыми внешними деталями и другим комплектом поставки:

– Leica Protection Plan S Body (номер для заказа: 16033) не входит
– Кабель USB Leica S (номер для заказа: 16014) не входит
– Кабель для синхронизации фотовспышки Leica S (номер для заказа: 16031) не входит

Эти продукты можно приобрести в качестве принадлежностей.

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1.49a
1.49b
1.50b
1.50a
1.50

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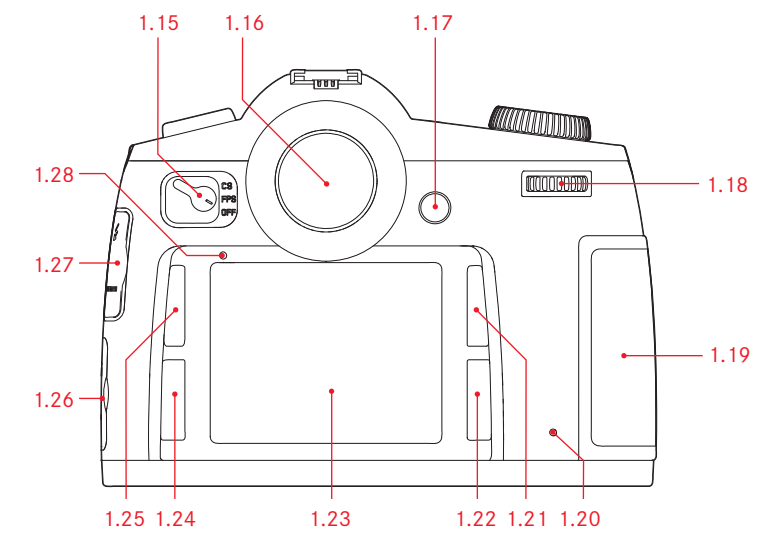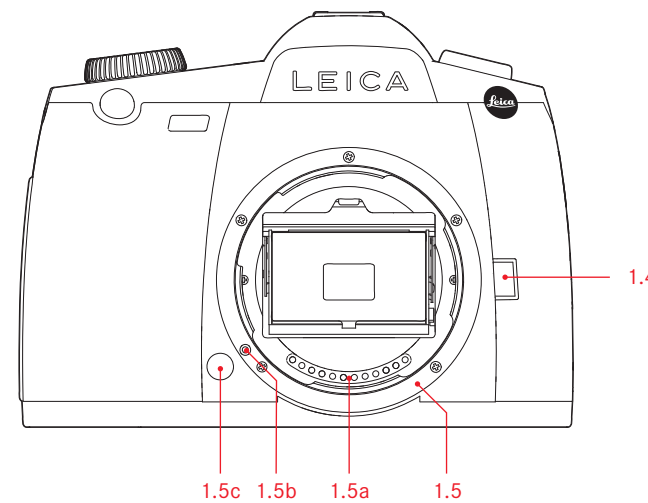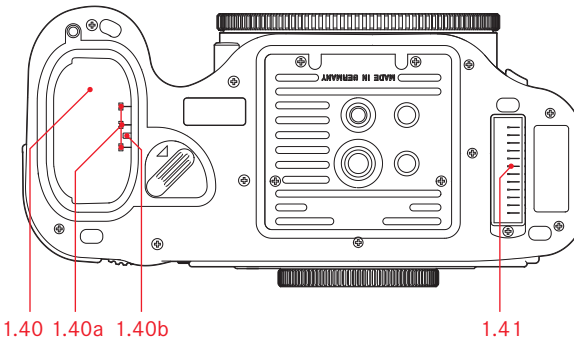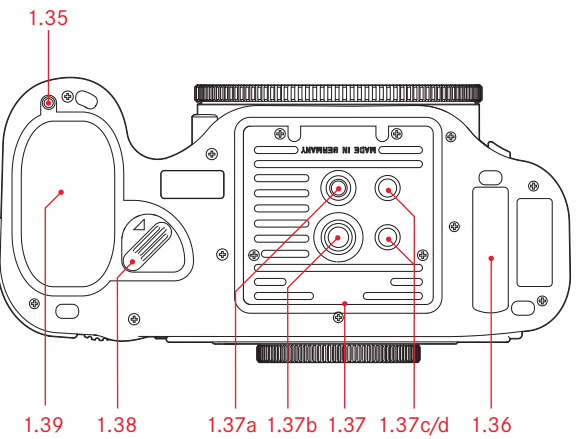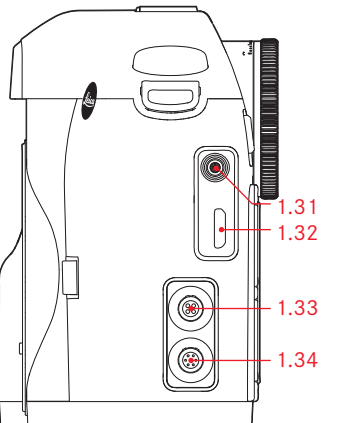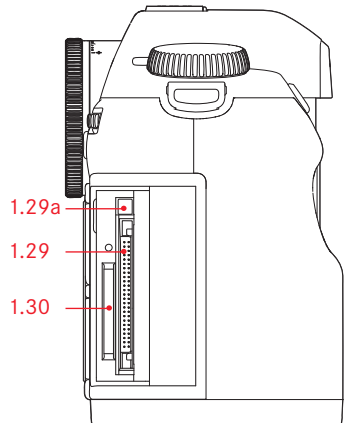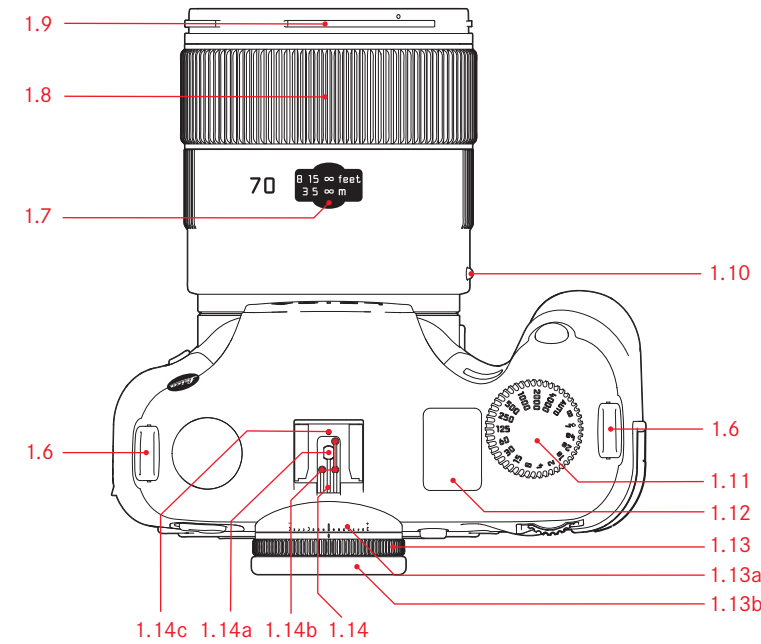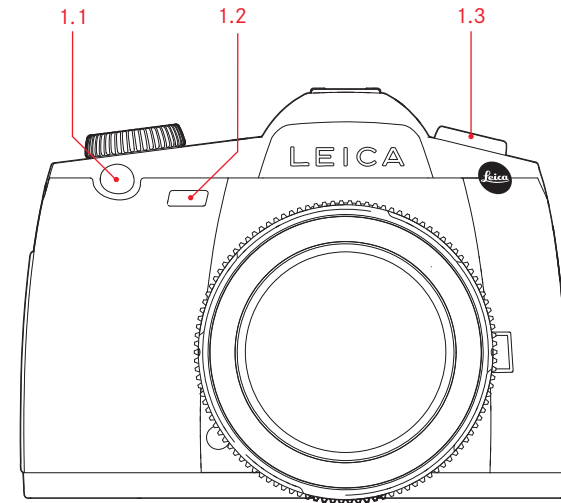
LEICA S
Instructions

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

FCC Note: (U.S. only)
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:
To assure continued compliance, follow the attached installation instructions and use only shielded interface cables with ferrite core when connecting to computer or peripheral devices.
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Trade Name: LEICA
Model No.:   LEICA S (Typ 006)
Responsible party/
Support contact: Leica Camera Inc.
                    1 Pearl Count, Unit A
                    Allendale, New Jersey 07401
                    Tel.: +1 201 995 0051
                    Fax: +1 201 995 1684
                    technicalinfo@leicacamerausa.com

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003

LEICA S (TYP 006)

FC Tested To Comply
    With FCC Standards

FOR HOME OR OFFICE USE

FOREWORD

Dear Customer,

Leica would like to thank you for purchasing the Leica S and congratulate you on your choice. With this unique digital medium format SLR camera, you have made an excellent selection.

We wish you a great deal of pleasure and success using your new Leica S.

In order to make best use of all the opportunities offered by this high performance camera, we recommend that you first read these instructions.

Your Leica Camera AG

Note:

Leica is constantly working on developing and optimizing the Leica S. As digital cameras have many functions that are controlled electronically, improvements and enhancements to the functions can be installed on the camera at a later date.

To do this, Leica releases what are known as firmware updates at irregular intervals. The cameras always have the latest firmware version when shipped, and you can also download it easily from our home page and install it on your camera. If you register as an owner on the Leica Camera home page, you will receive a newsletter informing you when a new firmware update is available. Further information on registration and firmware updates for your Leica S, as well as any amendments and additions to the details provided in the manual, can be found in the "Owners' Login" area at:

https://owners.leica-camera.com

To check whether your camera and lenses are equipped with the latest firmware version, select Firmware in the menu (5.41, see page 16, 26-29).

These instructions have been printed on 100% chlorine free bleached paper. The complex manufacturing process eases the burden on the water system and thus helps to protect our environment.

CONTENTS

WARNING MESSAGES

- Modern electronic components react sensitively to electrostatic discharge. As people can easily pick up charges of tens of thousands of volts, by walking on synthetic carpets for example, a discharge can occur when you touch your Leica S, particularly if it is placed on a conductive surface. If only the camera housing is affected, this discharge is harmless to the electronics. However, despite built-in safety circuits, the outer contacts, such as those on the base of the camera, should not be touched if at all possible for safety reasons.

- For any cleaning of the contacts, do not use an optical micro-fiber cloth (synthetic); use a cotton or linen cloth instead. Before touching the contacts, you can make sure you discharge any electrostatic charge by deliberately touching a heating or water pipe (conductive, earthed material). You can also avoid soiling and oxidization of the contacts by storing your Leica S in a dry place with the lens or bayonet cover fitted.

- You should only use the recommended accessories to prevent faults, short circuits or electric shock.

- The Leica S is protected against splashed water and dust. However, it should not be continuously exposed to rain.

- Do not attempt to remove parts of the body (covers); specialist repairs can only be carried out at authorized service centers.

The CE identification of our products documents adherence to the fundamental requirements of the valid EU guidelines.

LEGAL NOTICES

- Please ensure that you observe copyright laws. The recording and publication of pre-recorded media such as tapes, CDs, or other published or broadcast material may contravene copyright laws.

- This also applies to all of the software supplied.

- The SD, HDMI, CF and USB logos are registered trademarks.

- Other names, company or product names referred to in this manual are trademarks or registered trademarks of the relevant companies.

DISPOSAL OF ELECTRICAL AND ELECTRONIC EQUIPMENT

(Applies within the EC, and for other European countries with segregated waste collection systems)

This device contains electrical and/or electronic components and therefore should not be disposed of in general household waste! Instead it should be disposed of at a recycling collection point provided by the local authority. This costs you nothing.

If the device itself contains replaceable (rechargeable) batteries, these must be removed first and, if necessary, also be disposed of in line with the relevant regulations. Your local authority or waste disposal authority, or the store where you bought this device, can provide you with further information on this issue.

SCOPE OF DELIVERY

Before using your Leica S for the first time, please check that the accessories supplied are complete.

A. Battery
B. Quick charger S
C. Mains plug
D. USB connection cable with LEMO® connector
E. Carrying strap
F. Bayonet cover
G. Eyepiece cover
H. Sync cable with LEMO® connector

DESIGNATION OF PARTS

Front view

1.1   Shutter release button

1.2   Self timer LED / Sensor for white balance

1.3   GPS antenna

1.4   Stop down/function button

1.5   Bayonet with
        a. Contact strip
        b. Index point for attaching the lens
        c. Unlocking button

Top view

1.6   Carrying strap clip

1.7   Window for distance scale

1.8   Distance setting ring

1.9   Bayonet for lens hood

1.10   Red alignment button for changing lens

1.11   Shutter speed dial with additional detent positions for
        - **AUTO** (automatic shutter speed control for **A** and **P**)
        - **B** (long-time exposure)
        - **⚡** (Flash sync setting)

1.12   Top panel display

1.13   Diopter setting dial with
        a. Scale
        b. Eye cup

1.14   Flash unit shoe with
        a. Center (flash) and
        b. Control contacts
        c. Hole for retaining pin

Rear view

1.15   Main switch with detent positions
        a. **OFF** Camera turned off
        b. **FPS** Camera turned on, focal plane shutter activated
        c. **CS**   Camera turned on, central shutter activated

1.16   Viewfinder

1.17   Joystick

1.18   Click wheel

1.19   Cover (closed)

1.20   LED for indicating picture mode / recording data on to the card

1.21   Menu control/function button

1.22   Menu control/function button

1.23   Monitor

1.24   Menu control/function button

1.25   Menu control/function button

1.26   Cover (closed)

1.27   Cover (closed)

1.28   Brightness sensor

View from right (without cover)

1.29   CF card slot with
        a. Eject button

1.30   SD card slot

View from left (without cover)

1.31   Standard flash sync socket

1.32   HDMI socket

1.33   LEMO® USB socket

1.34   LEMO® remote control / flash sync socket

Bottom view

1.35   Hole for multi-function hand grip guide pin

1.36   Cover

1.37   Tripod plate with
        a. $^1/_4$" thread
        b. $^3/_8$" thread
        c.-d. Holes for rotation prevention

1.38   Battery release catch

1.39   Battery

1.40   Battery compartment (battery removed) with
        a. Contacts
        b. Guide rail

1.41   Contact strip for multi-function hand grip (cover removed)

Battery

1.42   Contacts

1.43   Guide groove

1.44   Socket for charging plug

Charger

1.45   Fixed battery connecting cable with
        a. 3-pin connector

1.46   Orange (**80%**) LED indicating charge level

1.47   Green (**CHARGE**) LED indicating charging in progress

1.48   2-pin socket for car charging cord

1.49   Interchangeable mains plugs (Euro/GB/AUS) with
        a. Release button
        b. USA mains plug (interchangeable plug removed)

1.50   Car charging cord with
        a. 2-pin connector for charger
        b. Plug for cigarette lighter

DISPLAYS

2. In the viewfinder
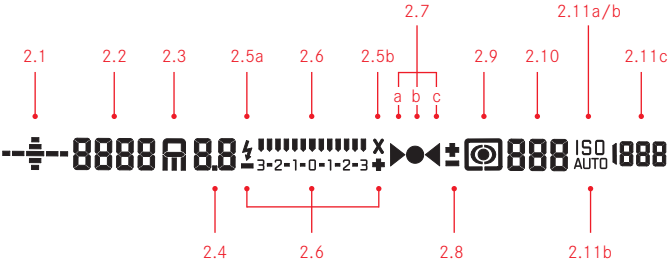
2.1 Horizon

(tilt about longitudinal axis / gradient about transverse axis; example displays apply to clockwise gradient; other directions are indicated accordingly)

a. max. ±0.5°
b. 0.5–2.5°
c. 2.5–5°
d. 5–10°
e. Flashing ≥10°

2.2 Shutter speed / exposure time

a. Manually set value for **m** and **T**, automatically controlled value for **A** and **P**; display in half steps, or

b. **HI** (high) or **LO** (low) for over or under exposure in automatic exposure modes **A**, **P**, **T** and due to flash, or **LO** if below the metering range.

c. **buI b B** setting for long-time exposure

d. **CArd** Full memory card warning message

2.3 Exposure mode

a. **P** = Programmed automatic exposure mode
b. **A** = Aperture priority
c. **T** = Shutter speed priority
d. **m** = Manual shutter speed and aperture setting

2.4 Aperture, manually set value for **m** and **A**, automatically controlled value for **T** and **P**; display in half steps

2.5 Flash displays

a. **⚡** Lit = Flash ready,
      Flashing = Flash charging, flash is not ready

b. **X** Lit = Shutter speed ≥ Sync speed set

2.6 Light balance

(markings: $^1/_2$ EV step each, last markings/numbers flash at ≤–3EV/≥+3EV) to indicate

a. Manual exposure compensation,

b. Variation between current metered value and stored exposure setting (with metering memory lock in automatic exposure modes **A**, **P**, **T**)

c. Exposure compensation

2.7 Focus displays

a. ▶ Only appears in manual mode or with manual AF override: Continuously lit if setting is too long

b. ● In manual mode: Continuously lit if setting is correct
   - For **AFs**: Continuously lit if setting is correct, flashes if correct setting is not possible,
   - For **AFc**: Continuously lit if setting is correct, goes out if focusing procedure is restarted,

c. ◀ Only appears in manual mode or with manual AF override: Continuously lit if setting is too short

2.8 Indicates exposure compensation / flash exposure compensation set

2.9 Metering method symbol

a. ◉ = Multiple field metering
b. ◎ = Center-weighted metering
c. ⊡ = Spot metering

2.10 Frame counter

a. **999** = Total pictures remaining
b. **USb** = External storage
c. **0**   (flashing at 2 Hz) = Memory card full
d. **- - -** (flashing at 2 Hz) = No memory card inserted
e. **L**   = Maximum number for series exposures
f. **Err** = Error message

2.11 Sensitivity displays

a. **ISO** For manual setting
b. **ISO AUTO** For automatic setting
c. **1600** Current sensitivity setting

Note:

The viewfinder LCD is always lit when the camera is on (see "Turning on the camera, page 25). The brightness of this illumination is automatically adjusted to the external lighting conditions to give optimum readability.

DISPLAYS

3. In the top panel display
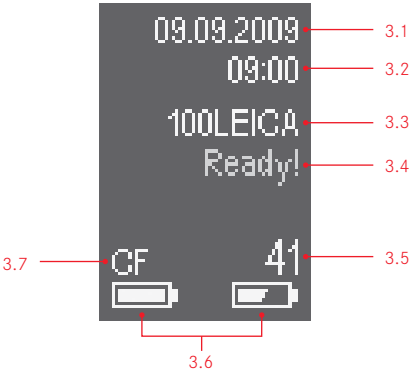
Initial view

(appears for 4s after turning on the camera, can be switched to the standard view at any time by tapping the shutter release button)

3.1 Date

3.2 Time

3.3 Folder name

3.4 Camera ready

3.5 Pictures remaining (approx.) or warning message (see 3.7)

3.6 Battery capacity (right for camera battery, left for hand grip battery if attached)

3.7 Memory card used, or warning messages (red):

No card = No memory card inserted

Full = Selected memory card full

Error = Card error
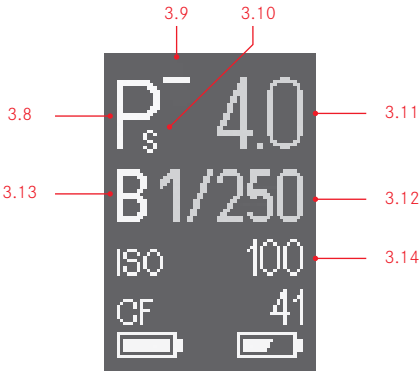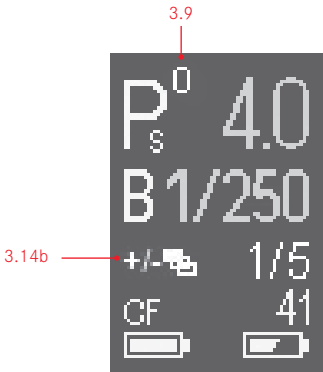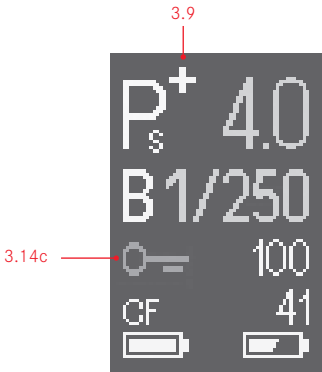
Standard view

(white displays: manually set, yellow displays: set with click wheel, green displays: automatically set, blue displays: set from PC via cable)

3.8 Exposure mode

3.9 a. +/− Exposure compensation set

b. +/0/− Progression of bracketing series:
Over exposed / Correctly exposed / Under exposed picture

3.10 Program shift set

3.11 Aperture

3.12 Shutter speed

3.13 Long time exposure

3.14 a. Sensitivity

Alternatively, if relevant function is active:

b. Bracketing series set (function symbol on left, appears alternately with c. if c. is also active, picture number / total on right)

c. Button lock (appears alternately with function symbol for b. if b. is also active)

DISPLAYS

4. In the monitor

4.1.1–.4   Button functions (1.21 / .22 / .24 / .25)

4.1.5   Color space

4.1.6   JPEG compression / resolution

4.1.7   DNG compression

4.1.8   White balance

4.1.9   Focal length

4.1.10   Scale for exposure compensation / light balance

4.1.11   Symbol for shutter speeds that can be used with normal flash functions

4.1.12   Symbol for
       a. ▭ Single pictures
       b. ▱ Series exposures
       c. ↻12 Self-timer mode

4.1.13   Exposure metering method

4.1.14   Flash synchronization time

4.1.15   Bracketing series

4.1.16   Mirror pre-release

4.1.17   GPS reception
       a. Position last determined maximum of 1 min ago
       b. Position last determined maximum of 24 hrs ago
       c. Position last determined at least 24 hrs ago, or no position data available

4.1.18   Button lock set

4.1.19   Battery capacity (right for camera battery, left for hand grip battery if attached)

4.1.20   Memory card used

4.1.21   Number of pictures

4.1.22   Focusing mode

4.1.23   Shutter speed

4.1.24   Aperture

4.1.25   Exposure mode

4.1.26   Sensitivity

4.1.27   Exposure compensation value

4.2   Normal review
(picture(s) cover entire monitor area)
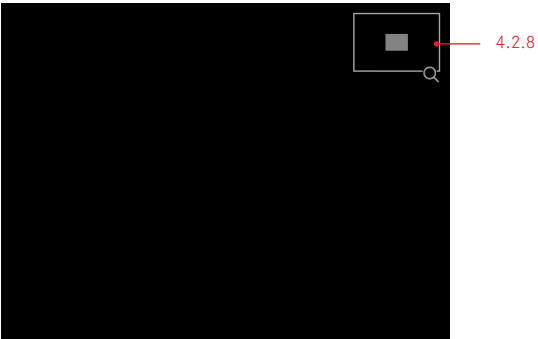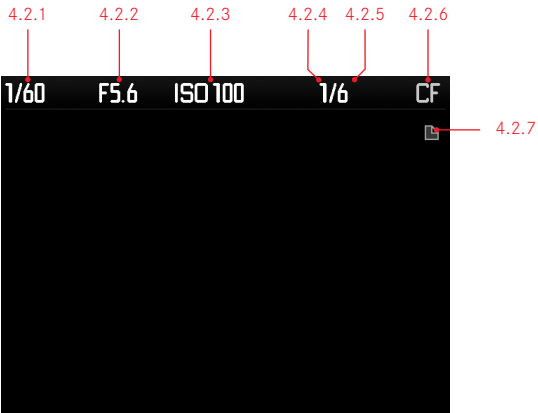
4.2.1   Shutter speed

4.2.2   Aperture

4.2.3   Sensitivity

4.2.4   Number of picture(s) shown

4.2.5   Total number of pictures on selected memory card

4.2.6   Selected memory card

4.2.7   Symbol for
a. 📄 Scroll function
b. 🔍 Zoom function
(only 1 symbol; none appear if 4.2.10/.11/.12 are displayed)

4.2.8   Enlargement level and position of section
(appears instead of 4.2.1-4.2.6, but not if 4.2.10 /.11/.12
are displayed)

4.2.9   Symbol for protected pictures
(only appears in conjunction with 4.2.10 /.11/.12, or for delete
or protection operations)

4.2.10/.11/.12   Button functions (1.22/.24/.25)
(only appears after pressing one of the buttons
1.21/.22/.24/.25, disappears after 5s)

4.3   Review with histogram
(like 4.2, additionally)
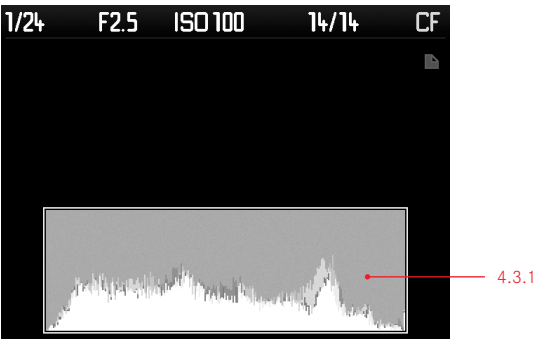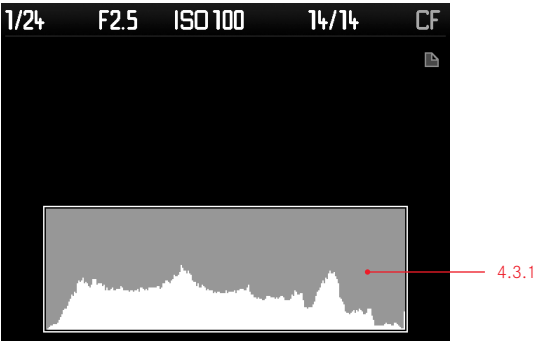
4.3.1   Histogram (standard or RGB, selectable using menu control)

DISPLAYS

4. In the monitor (continued)

4.4 Review with clipping displays
(like 4.2 additionally, image areas without definition flash in red and/or blue)

```
1/180    F3.4    ISO 100      9/10     CF
```

4.4.1

4.4.1   Clipping symbol

4.5 Review with additional information
(Image reduced in additional to 4.2)

```
1/125    F5.6    ISO 100      5/10     CF
                              m        EV +1
                                       AFs
                                       70 mm
                                       WB Auto
         L100-1952                     DNG comp.
         25/01/2012   15:17:12   JPEG  37.5
         Adobe RGB
         User: ---
```

4.5.9
4.5.10
4.5.8
4.5.11
4.5.12
4.5.7
4.5.13
4.5.6
4.5.5
4.5.14
4.5.4
4.5.15
4.5.3
4.5.16
4.5.2
4.5.17
4.5.1
4.5.18
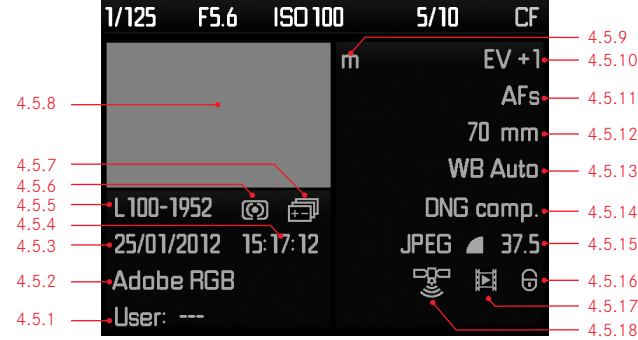
4.5.1   User profile number / name

4.5.2   Color space

4.5.3   Date

4.5.4   Time

4.5.5   Folder number / file name

4.5.6   Exposure metering method

4.5.7   Symbol for bracketing series

4.5.8   Picture

4.5.9   Exposure mode

4.5.10   Exposure compensation

4.5.11   Focus mode

4.5.12   Focal length

4.5.13   White balance

4.5.14   DNG compression

4.5.15   JPEG compression / resolution

4.5.16   Symbol for protected pictures (only appears if pictures are selected)

4.5.17   Symbol for HDMI slide show (only appears if pictures are selected)

4.5.18   GPS
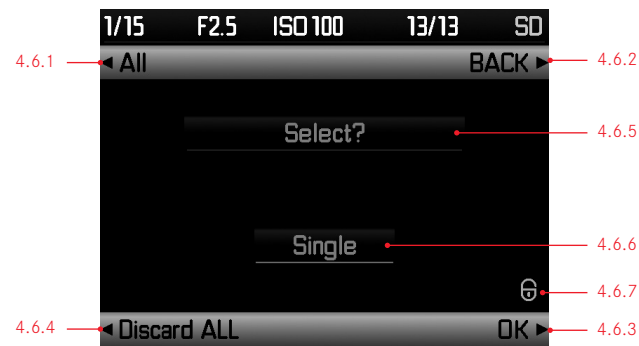
4.6.1-.4   Button functions 1.21 / .22 / .24 / .25

4.6.5   Selected function

4.6.6   Picture(s) to be selected

4.6.7   Symbol for selected / protected picture
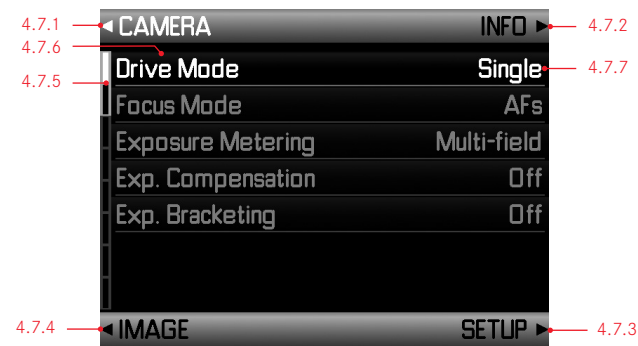
4.7.1-.4   Button functions 1.21 / .22 / .24 / .25
            (selected menu section indicated in white)

4.7.5   Scrollbar to indicate the selected menu section
            (white frame) and the menu page displayed (white field)

4.7.6   Menu functions (selected menu function indicated in white and
            underlined in red in conjunction with 4.7.7)

4.7.7   Current setting for selected menu function indicated in white and
            underlined in red in conjunction with 4.7.6)

MENU ITEMS

CAMERA menu
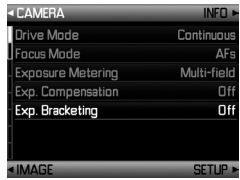
5.1	Drive Mode	Single picture / continuous mode, self-timer		see p. 36/46
5.2	Focus Mode	AFs / AFc / MF	directly selectable by holding down (≥1s) button 1.22, see p. 29	see p. 37
5.3	Exposure Metering	Metering methods	directly selectable by holding down (≥1s) button 1.25, see p. 29	see p. 38
5.4	Exp. Compensation		directly selectable by holding down (≥1s) button 1.23, see p. 29	see p. 39
5.5	Exp. Bracketing	Automatic exposure series		see p. 40
5.6	Auto Slow Sync.	Restriction of shutter speeds used		see p. 34
5.7	Flash Sync. Mode	Start or end of exposure		see p. 53
5.8	Mirror Up Mode			see p. 47

IMAGE menu
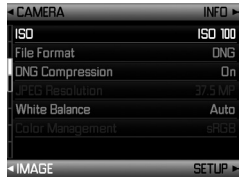
5.9	ISO	Sensitivity	directly selectable by holding down (≥1s) button 1.26, see p. 29	see p. 34
5.10	File Format	File format / Compression rate		see p. 32
5.11	DNG Compression			see p.32
5.12	JPEG Resolution			see p.32
5.13	White Balance			see p.33
5.14	Color Management	Working color space (for JPEG formats only)		see p. 35
5.15	Contrast	Image contrast (JPEG formats only)		see p. 35
5.16	Sharpness	Image sharpness (JPEG formats only)		see p. 35
5.17	Saturation	Image color saturation (JPEG formats only)		see p. 35

SETUP menu
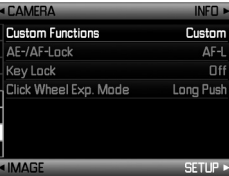
5.18	**Data Storage**	Select split of data between memory cards and external memory)	
5.19	**Image Numbering**		
5.20	Format	Formatting the memory card(s)	
5.21	**USB Mode**	Detection of camera as ext. drive or using PTP protocol	
5.22	**HDMI**	Settings for slideshow playback	
5.23	**Sensor Cleaning**	Open shutter for cleaning the sensor	
5.24	**Auto Review**	Automatic review of the last picture	
5.25	**Histogram**	Graphic indicating the distribution of brightness	
5.26	**Clipping Definition**		
5.27	**Monitor / Display**	Monitor and top panel display settings	
5.28	**Auto Power Off**		
5.29	**Acoustic Signal**	AF confirmation / warnings	
5.30	Horizon	Tilt and inclination indicator	
5.31	**Custom Functions**	Assignment of functions for buttons 1.4, 1.22, 1.23, 1.25, and 1.26	
5.32	**AE-/AF-Lock**	Assignment of storage functions to the shutter release button and/or the joystick	
5.33	**Key Lock**	Activates/deactivates the click wheel and shutter speed dial	
5.34	**Click Wheel Exp. Mode**	Change the response time of the click wheel when setting the exposure	
5.35	User Profile	User-specific profile	
5.36	**Reset**	Reset all settings (to the factory default settings)	
5.37	**GPS**	Record location data	
5.38	**Date**		
5.39	**Time**		
5.40	**Language**		
5.41	**Firmware**	Indicates the firmware version for the camera and the attached lens	

Note:

The gray menu functions are available for Custom Functions (see p. 29).

PREPARATIONS

ATTACHING THE CARRYING STRAP
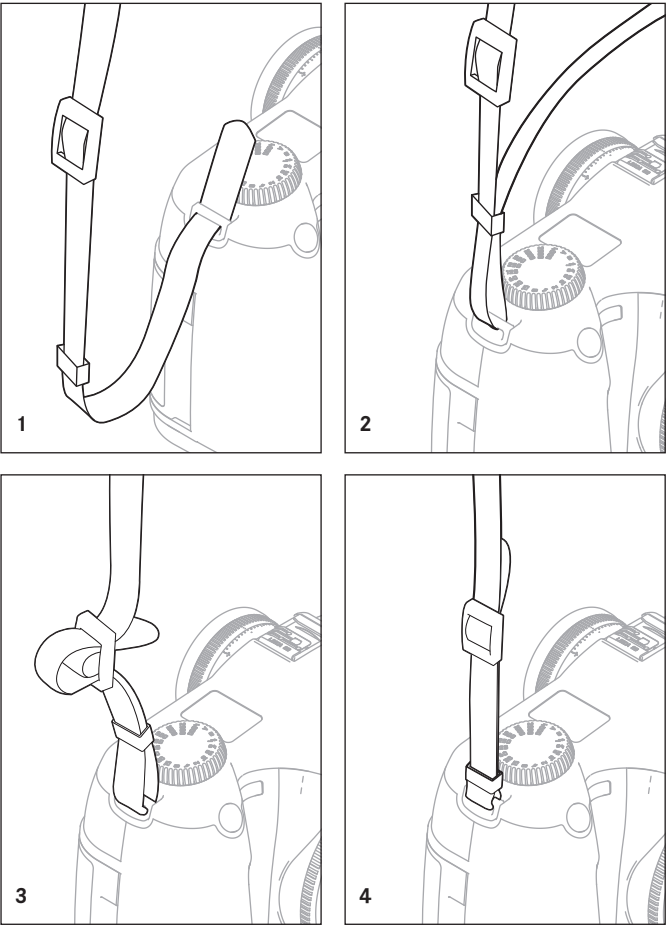
CHARGING THE BATTERY

The Leica S is powered by a Lithium ion battery (A).

Attention:

- Only the battery type specified and described in this manual, and/or battery types specified and described by Leica Camera AG, may be used in this camera.

- This battery may only be used in the units for which it is designed and may only be charged exactly as described below.

- Using this battery contrary to the instructions and using non-specified battery types may result in an explosion under certain circumstances

- The batteries may not be exposed to sunlight, heat, humidity or moisture for long periods. Likewise, the battery may not be placed in a microwave oven or a high pressure container to prevent a risk of fire or explosion.

- Moist or wet batteries may not be charged or used in the camera under any circumstances.

- Always ensure that the battery contacts are clean and freely accessible. While lithium ion batteries are protected against short circuits, they should still be protected against contact with metal objects such as paper clips or jewelry. A short-circuited battery can get very hot and cause severe burns.

- If a battery is dropped, check the casing and the contacts immediately for any damage. Using a damaged battery can damage the camera.

- In case of smell, discoloration, deformation, overheating or leaking fluid, the battery must be removed from the camera or charger immediately and replaced. Continued use of the battery carries a risk of overheating, resulting in fire and/or explosion.

- In case of leaking fluid or a smell of burning, keep the battery away from sources of heat. Leaked fluid can catch fire.

- A safety valve in the battery ensures that any excess pressure resulting from improper use is reduced in a controlled way.

- Only the charger specified and described in this manual, or other chargers specified and described by Leica Camera AG, may be used. The use of other chargers not approved by Leica Camera AG can cause damage to the batteries and, in extreme cases, lead to serious or life-threatening injuries.

- The charger supplied should be used exclusively for charging this battery type. Do not attempt to use it for other purposes.

- Ensure that the mains outlet used is freely accessible.

- The car charging cable supplied may never be connected while the charger is connected to the mains.

- The battery and charger may not be opened. Repairs may only be carried out by authorized workshops.

- Ensure that the batteries cannot be accessed by children. Swallowing batteries can cause asphyxiation.

First aid:

- If battery fluid comes into contact with the eyes, there is a risk of blinding. Wash the eyes immediately with clean water. Do not rub the eyes. Seek medical attention immediately.
- If leaked fluid gets onto the skin or clothing, there is a risk of injury. Wash the affected areas with clean water. Seek medical attention.

Notes:

- The battery must have a temperature of 0°-35°C /32°-95°F to be charged (otherwise the charger will not turn on, or will turn off again).
- Lithium ion batteries can be charged at any time, regardless of their current charge level. If a battery is only partly discharged when charging starts, it is charged to full capacity faster.
- A new battery only reaches its full capacity after it has been fully charged and – by use in the camera - discharged again 2 or 3 times. This discharge procedure should be repeated every 25 cycles.
- The batteries and the charger heat up during the charging process. This is normal and not a malfunction.
- If the two LEDs (1.46/1.47) flash rapidly (> 2Hz) after starting charging, this indicates a charging error (e.g. maximum charging time exceeded, voltages or temperatures outside the permitted ranges, or short circuit). In this case, disconnect the charger from the mains and remove the battery. Ensure that the above temperature conditions are met and then restart the charging process. If the problem persists, please contact your dealer, the Leica office in your country or Leica Camera AG.
- Lithium ion batteries should only be stored in a partially charged condition, i.e. not completely discharged or fully charged (see p. 20). If stored for very long periods, it should be charged up and discharged again around once a year.
- Rechargeable lithium ion batteries generate power through internal chemical reactions. These reactions are also influenced by the external temperature and humidity. To ensure a maximum service life of the battery, it should not be exposed to constant extremes (high or low) of temperature (e. g. in a parked car in the summer or winter).
- Even when used under optimum conditions, every battery has a limited service life! After several hundred charging cycles, this becomes noticeable as the operating times get significantly shorter.
- Hand in damaged batteries at a collection point for proper recycling, in line with the applicable regulations (see p. 6/67).

- The replaceable battery provides power to a back-up battery which is permanently fitted in the camera. This back-up battery retains the set date and time for up to 3 months. If this back-up battery becomes discharged it must be recharged by inserting a charged main battery. Once the replaceable battery has been inserted, the full capacity of the back-up battery is recovered after about 60 hours. This process does not require the camera to be turned on. However, you will have to set the date and time again in this situation.
- Remove the battery if you will not be using the camera for a long period of time. When doing so, turn the camera off using the main switch first (see p. 25). Otherwise, after several weeks the battery could become totally discharged, i.e. the voltage is sharply reduced as the camera still consumes a small amount of current (for saving your settings) even when it is turned off.

Preparing the charger

CONNECTING THE CHARGER
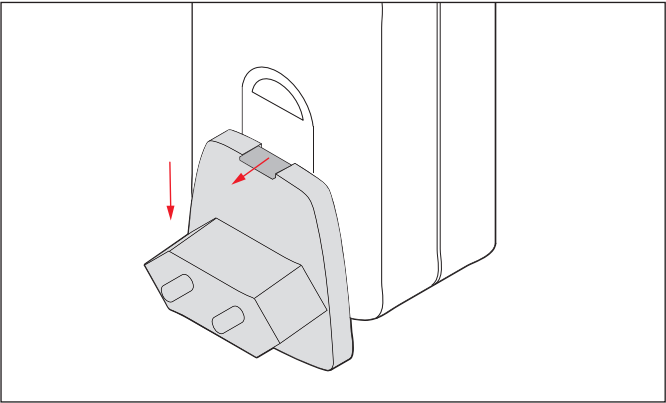
For use outside the USA

1. Insert the appropriate plug for the local mains supply into the charger (B). This is done by simultaneously
   a. pushing the release button (1.49a) upwards, and
   b. pushing up the plug (1.49) from its idle position.
2. It can then be completely detached upwards.
3. The appropriate plug type is then pushed into the charger from above until it engages.
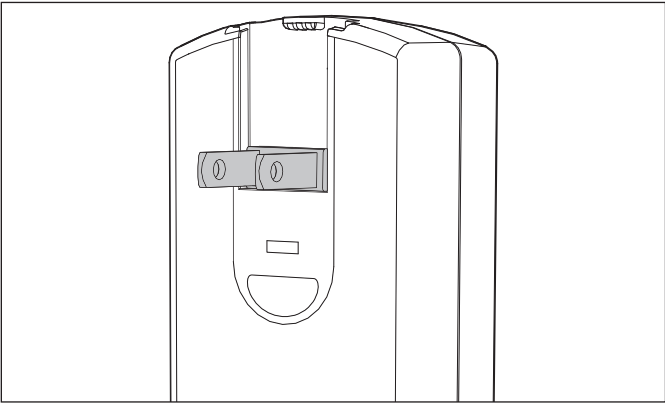
For use in the USA

1. Detach the factory fitted mains plug (C) from the charger (B). This is done by simultaneously
   a. pushing the release button (1.49a) upwards, and
   b. pushing up the plug (1.49) from its idle position.
2. You can then fold out the two pins for the US plug (1.49b), which are pushed down into the normal position.

Notes:
• The charger automatically switches to the prevailing mains voltage.
• When using the car charging cable supplied, the charger can be used in all vehicles with a 12V or 24V on board supply. It automatically switches to the relevant voltage.
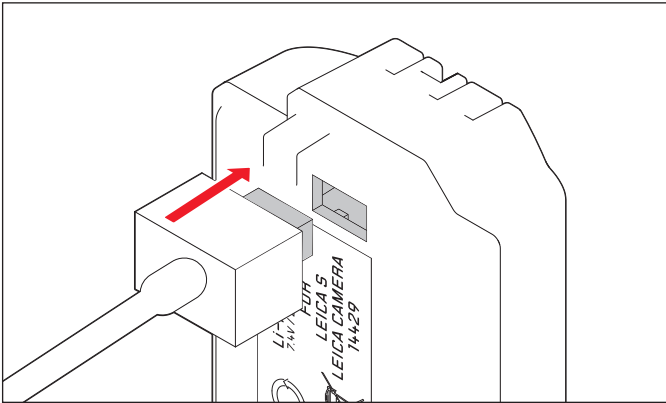
1. Connect the charger (B), i.e. plug it (1.45a) into the socket on the battery (1.44) and connect the mains plug (1.49/1.49b) to an outlet.
• To confirm that charging is in progress, the green LED labeled **CHARGE** (1.47) starts flashing.
   As soon as the battery is charged to at least $^4/_5$ of its capacity, the orange LED labeled **80%** (1.46) also lights up. When the battery is fully charged, i.e. 100% capacity has been reached – after around $3^1/_2$ hours – the green **CHARGE**-LED is continuously lit.

Notes:
• The **80%** LED lights up after around 2 hours due to the charging characteristics. Therefore, if you do not need the full capacity, the camera is always ready to use again in a relatively short time.
• If the green **CHARGE** LED is continuously lit, this indicates that the charger has automatically switched to trickle charging.

2. The charger should then be disconnected from the mains. However, there is no risk of overcharging.

INSERTING/REMOVING THE BATTERY

Inserting

1. Set the main switch (1.15) to **OFF**.
2. Slide the battery (C) as far as possible into the battery compartment, contacts first and with the positioning groove (1.43) pointing towards the center of the camera. It automatically engages in this position.
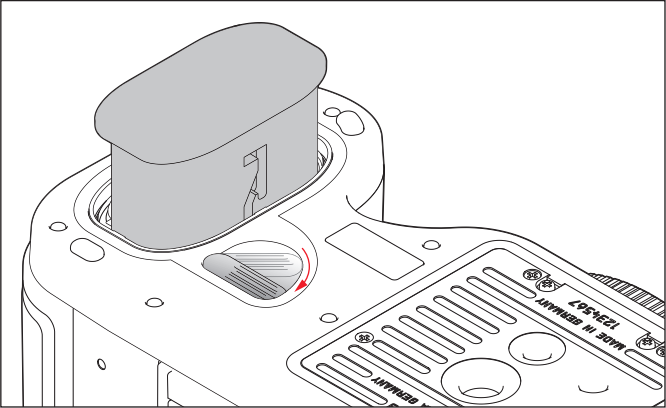
Removing

1. Set the main switch (1.15) to **OFF**.
2. Turn the release catch (1.38) clockwise as far as it will go. A spring in the battery compartment then pushes the battery out by around 1cm.

Note:
The locking mechanism has a catch to prevent the battery from accidentally falling further out, even if the camera is held upright.

3. Press the battery back in by around 1mm to release the lock, and
4. then remove it from the compartment or, if the camera is held upright, allow it to fall out.

Charge level displays (3.2)
The battery charge level is indicated in the top panel display (1.12) and - in the picture data view (4.1) - in the monitor (1.23).

= Approx.100%,   White
= Approx.90%,   White
= Approx.75%,   White
= Approx.50%,   White
= Approx.25%,   White
= Approx.10%,   White
= Approx.5%,   Red
= Approx.3%,   Red flashing, replacement or recharging necessary

INSERTING AND REMOVING THE MEMORY CARDS

The Leica S enables you to use 2 card types simultaneously to store your picture data, and has card slots for SD/SDHC/SDXC (Secure Digital) and CF (Compact Flash up to UDMA 7) cards.
SD/SDHC/SDXC cards have a write protection switch, that can be used to prevent unintentional storage and deletion of pictures. This switch takes the form of a slider on the non-beveled side of the card; in the lower position, labeled LOCK, the data on the card is protected.

Note:
Do not touch the memory card contacts.

Inserting

1. Set the main switch (1.15) to **OFF**.
2. Open the cover (1.19) on the right-hand side of the camera by sliding it slightly backwards in the direction of the arrow and then opening it to the right.
3. Insert the memory card(s) you want to use as follows:
   a. Insert CF cards into the slot with the contacts pointing towards the camera and the front side towards the front of the camera (1.29). Slide it into the card slot as far as possible.

Note:
When inserting the card, make sure that the eject button (1.29a) is pushed in completely (see "Removing" on the next page).
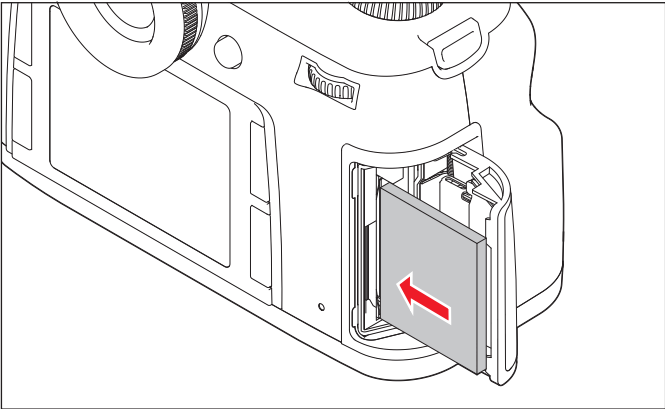
Important:

Do not exert force. This could damage the contacts in the card slot.

b. Insert SD/SDHC/SDXC cards into the slot with the contacts pointing to the rear and the beveled corner pointing up (1.30). Slide them all the way into the slot against the spring resistance until you hear them click into place.

Important:

Make sure that you do not insert an SD card into the CF card slot as you may not be able to remove it again.

4. Close the cover again, by pressing it down and sliding it forwards until it locks into place.
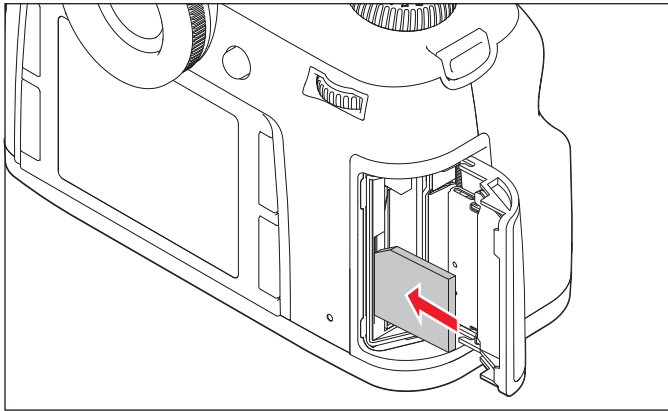
Removing

1. Set the main switch (1.15) to **OFF**.

2. Open the cover (1.19) on the right-hand side of the camera by sliding it slightly backwards in the direction of the arrow and then opening it to the right.

CF cards

3. Press the eject button (1.29a) in to eject the card part of the way out of the slot, allowing you to

4. completely remove it.

SD/SDHC/SDXC cards

3. Press the card back into the slot to release it and eject it a little way out of the slot, allowing you to

4. completely remove it.

5. Close the cover again, by pressing it down and sliding it forwards until it locks into place.

Displays

Memory card errors are indicated by different messages in the viewfinder, monitor and top panel display.

Notes:

• If the memory cards cannot be inserted, check that they are aligned correctly.

• The range of memory cards available is constantly changing; some cards may result in malfunctions when used in the Leica S.

• Do not remove a memory card or the battery while the red LED (1.20) at the bottom right of the monitor (1.23) is flashing to indicate picture recording and/or data being saved to the card(s). Otherwise the not yet (completely) saved image data may be lost.

• The Leica S provides various options for saving picture data. More information on this topic can be found under "Saving picture data / memory card management" on p. 35

• As electromagnetic radiation, electrostatic charges, and defects on the camera or the card(s) can lead to damage or loss of the data on the memory card(s), we recommend that you also transfer the data to a computer and save it there (see p. 62).

• For the same reason, it is recommended that cards are always stored in an antistatic container.

• Proper functioning of the camera cannot be guaranteed when using WiFi cards.

CHANGING THE FOCUSING SCREEN

The Leica S allows you to change the focusing screen (see also "System accessories / Interchangeable focusing screens", p. 65). The camera is supplied with a full matt screen as standard.

Other focusing screens are supplied separately in a container with tweezers and a dust brush.

To change the screens,
1. detach the lens (see p. 24), and
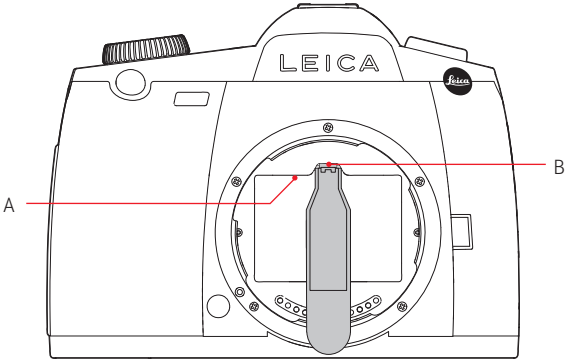
2. remove the screen frame A from its engaged position by pressing the clip B with the tip of the tweezers. The frame then clicks downwards with the focusing screen.
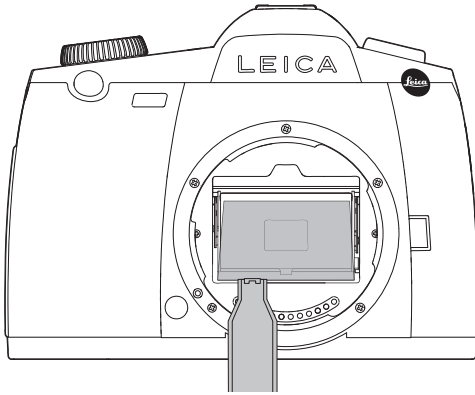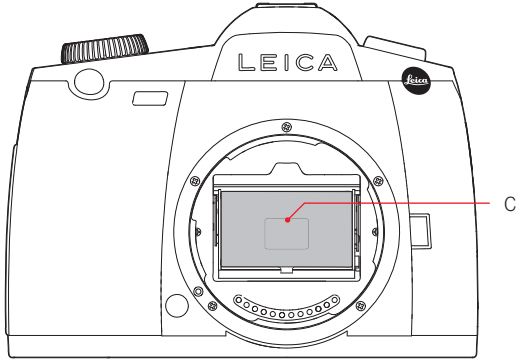
3. Then pick up the focusing screen C by the small stud with the tweezers, tilt slightly upwards and remove.
4. The screen is then temporarily placed in the side compartment of the container.
5. Pick up the screen to be inserted by its stud with the tweezers,
6. insert it in the frame, and
7. push the frame up with the tip of the tweezers until it clicks into place.

Important:

Follow these instructions exactly when changing the focusing screen. Take the utmost care to protect the sensitive surfaces of the focusing screens from scratches.

LEICA S LENSES

Leica S lenses all have some characteristic external features:

- Their distance setting ring (1.8) works differently depending on which focus mode is set:

- In manual mode (**MF,** see p. 16/26/37) the distance is set by turning the ring, as normal – in this case it is mechanically coupled to the optical construction from the outset.

- In autofocus mode (**AFs/AFc,** see p. 16/26/37) it is initially uncoupled, so that holding the lens with the ring does not prevent motorized adjustment. However, you can "override" the automatic setting at any time, i.e. set the distance manually in AF mode. In this case, turning the ring immediately couples it to the optical system.

- The internal distance scale can be read through a window (1.7).

- They do not have an aperture setting ring. The aperture is set using the click wheel (1.18, see p. 42) on the camera body.

Note:

Some Leica S lenses are available with an integral central shutter.

ATTACHING AND REMOVING THE LENS

All lenses and accessories with a Leica S bayonet fitting can be attached to the Leica S.
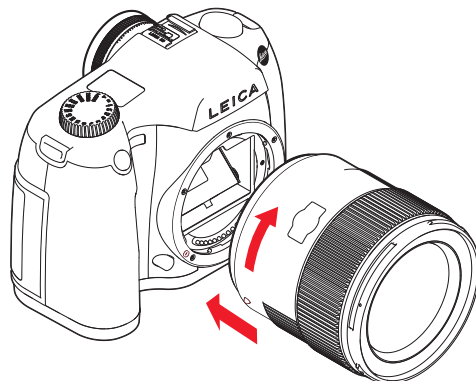
Leica S lenses are attached as follows:
1. Position the red dot on the lens mount opposite the bayonet release button (1.5c) on the camera body.
2. In this position, insert the lens.
3. Turn the lens as far as possible to the right, and you will hear and feel it click into place.
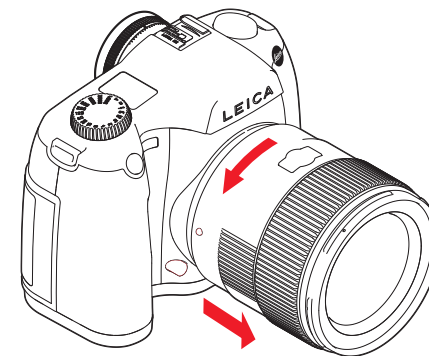
To remove the lens
1. Press the release button
2. Unlock the lens by turning it to the left, and
3. Pull it straight off.

Notes:

- To protect against ingress of dust etc. into the interior of the camera, and particularly to keep the sensor surface free of dust as far as possible, it is important always to have a lens or a cover attached to the camera body.
- For the same reason, change lenses quickly and in an environment that is as dust-free as possible.
- Leica publishes firmware updates for lenses at irregular intervals. You can easily download new firmware from our home page and transfer it to your lens. Further information can be found on p. 64.

EYEPIECE ADJUSTMENT

The viewfinder (1.17) can by adjusted from -3 to +1 diopters, so that it is exactly set to match your eye. While looking at the viewfinder image, turn the serrated dial (1.13) until the markings for the selective metering field are sharp.

Note:

If you are not looking through the viewfinder, e.g. for pictures on a tripod, we recommend attaching the eyepiece cover (G). This prevents any unwanted influences on the exposure metering. The cover can be stored on the carrying strap.

TURNING THE CAMERA ON AND OFF

The Leica S is turned on and off using the main switch (1.15), which engages in three positions:
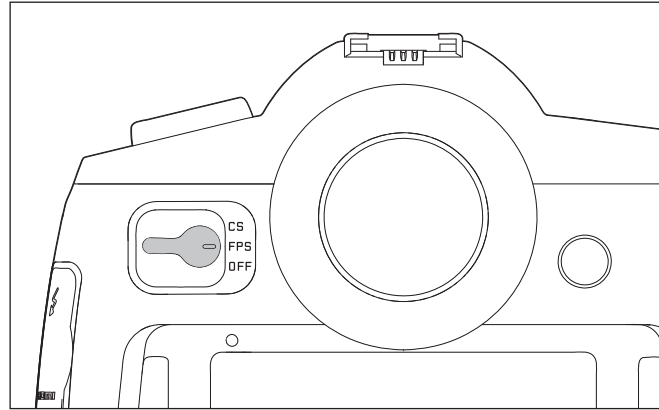
a. OFF – **Camera turned off**

b. FPS – **Camera turned on, focal plane shutter in body in operation**
- The shutter speed is controlled using the focal plane shutter in the camera. All speeds are available (see also "Shutter speed dial", p. 42).

c. CS   – **Camera turned on, central shutter in lens in operation**
- The shutter speed is controlled using the central shutter in the lens. Speeds of between $8-^1/_{1000}$ s are available (see also "Shutter speed dial", p. 42).

Note:

The camera also works when set to CS with the focal plane shutter, if
- a lens with no central shutter is attached, or faster shutter speeds than 8s, and/or
- slower shutter speeds than $^1/_{1000}$ s are set.

After turning on, i.e. selecting either the FPS or CS function, the LED (1.20) lights up until the camera is ready (2s) and the displays in the viewfinder (1.16/2) and in the top panel display (1.12/3) appear (see p. 10/11).

Notes:

- Even if the main switch is not set to OFF, the camera is automatically turned off if an automatic power off time has been set in the menu (Auto Power Off, (5.28), see p. 26/30) and none of the functions are used during this time.
- Turning off the camera not only cancels functions currently running, i.e. bracketing series (see p. 40) and self timer mode (see p. 46), it also deactivates them in the relevant menus.

MENU CONTROL

Most of the modes and settings on the Leica S are operated using menus. Navigating and making settings throughout the menu is extremely quick and easy, as

– the menu items are divided into logical functional groups that can be accessed directly, and

– there are also five freely assignable (menu) functions that can be accessed directly.

Calling up the menu
To call up menu control and directly access the individual pages, you use three (1.22, 1.24, 1.25) of the four buttons located to the left and right of the monitor (1.23).

Note:
The four buttons (1.21, 1.22, 1.24, 1.25) are so-called "soft keys". Outside the normal menu control, e.g. when reviewing pictures in the monitor, they have different functions, indicated by corresponding displays.

Settings in the menu
All settings for the menu items can either be made using the click wheel (1.18) or the joystick (1.17).

Exiting the menu
You can exit the menu in various ways:

– To activate recording mode:
  Tap the shutter release button (1.1)

– To activate the picture data display (4.1, see also p. 12):
  Briefly press the button (1.21) labeled INFO.

– To activate review mode:
  Briefly press the button (1.21) again in the picture data display – it is now labeled PLAY.

Menu function groups
The menu list on the Leica S is divided into 3 function groups (see also p. 16/17):

– CAMERA
– IMAGE
– SETUP

The function groups are made up of 2 or 4 pages depending on their scope. On each page, the menu items appear on the left on the individual lines, with the corresponding settings alongside them on the right.

Navigating in the menu / Setting functions
1. Select the first pages of the relevant menu function group by briefly (≤1s) pressing one of the three buttons (1.22, 1.24, 1.25) twice, i.e. button (1.25) for CAMERA functions, button (1.24) for the IMAGE functions, and button (1.22) for the SETUP functions.

   • If the monitor was previously inactive (dark), the first press activates the picture data display. The three button function indications (4.1.1), (4.1.3) and (4.1.4) are labeled with the names of the corresponding menu function groups for clarity.

   • If you were in review mode, an intermediate step initially displays only the button function indications that are valid in this situation – MENU (4.2.12), DELETE (4.2.11) and PROTECT (4.2.10).

To assist you, the menu screen shows:

– The selected menu function group in white (4.7.1)
– The scrollbar (4.7.5) on the left indicating which of the total of 8 menu pages you are on
– The active menu function line in white and underlined in red (this applies to all menu levels). To the right of the line, the currently set option for the function or the currently set value is always specified.
  When you select a page, the last menu item changed is initially active.
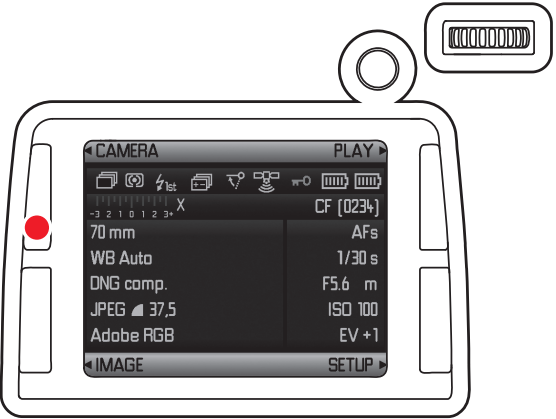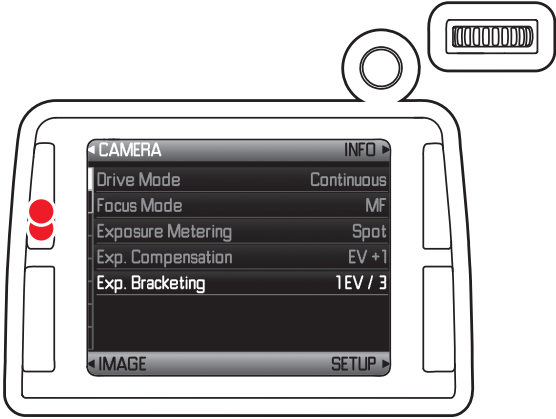
2. Briefly pressing the buttons (1.25), (1.24) and (1.22) again allows you to call up each page for the relevant menu function group directly, i.e. scroll through the pages.

◄ CAMERA INFO ►
Auto Slow Sync. 1 / f
Flash Sync. Mode Start of Exp.
Mirror Up Mode On
◄ IMAGE SETUP ►

◄ CAMERA INFO ►
ISO ISO 100
File Format DNG + JPEG fine
DNG Compression On
JPEG Resolution 37.5 MP
White Balance Auto
Color Management sRGB
◄ IMAGE SETUP ►

◄ CAMERA INFO ►
Data Storage Sequential
Image Numbering
Format
USB Mode PTP
HDMI Automatic
Sensor Cleaning
◄ IMAGE SETUP ►

◄ CAMERA INFO ►
Contrast Standard
Sharpness Standard
Saturation Standard
◄ IMAGE SETUP ►

◄ CAMERA INFO ►
Auto Review 5 s
Histogram Standard
Clipping Definition 2 / 253
Monitor / Display
Auto Power Off 2 minutes
Acoustic Signal Low
Horizon
◄ IMAGE SETUP ►

3. The individual menu items are selected
   - either by turning the click wheel (1.18); right= down / left= up,
   - or by pressing the joystick (1.17) in the relevant direction.
     All menu items are in a continuous loop, i.e. they can all be reached without the division into the three function groups and in either direction.

◀CAMERA	INFO ▶
Drive Mode	Continuous
Focus Mode	**AFs**
Exposure Metering	Multi-field
Exp. Compensation	Off
Exp. Bracketing	Off
◀IMAGE	SETUP ▶
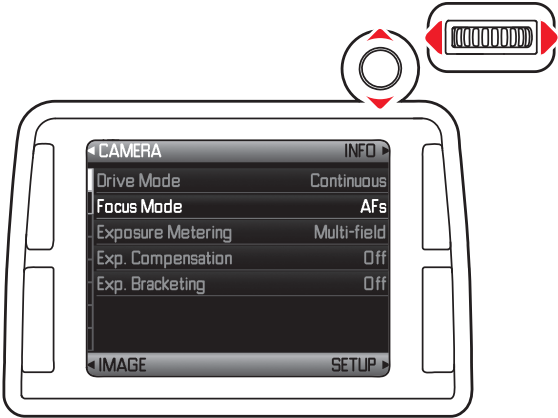
4. Press the click wheel or the joystick inwards or to the right to call up the list of available options for a function.
   • The submenu appears, listing the available options or the values that can be set.

BACK ▶
Focus Mode
AFs
AFc
MF
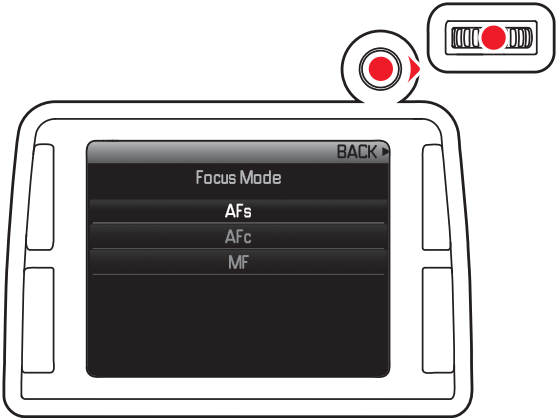
5. Turn the click wheel or press the joystick in the relevant direction (different depending on whether you are using a list or a scale) to select the option / value you want to set.

BACK ▶
Focus Mode
AFs
AFc
MF
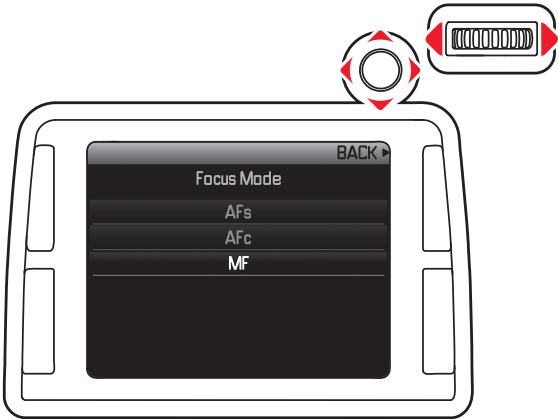
Note:
Briefly pressing the button labeled BACK (1.21) allows you to return to the menu at any time without applying any changes made in the submenus. Except in items that require a horizontal movement to set them, this can also be done by pressing the joystick to the left.

6. Press the click wheel or the joystick inwards to confirm the set option / value.
   • The display returns to the next menu level up or, for functions that require further settings, advances to the next option.

◀CAMERA	INFO ▶
Drive Mode	Single
Focus Mode	**MF**
Exposure Metering	Multi-field
Exp. Compensation	Off
Exp. Bracketing	Off
◀IMAGE	SETUP ▶
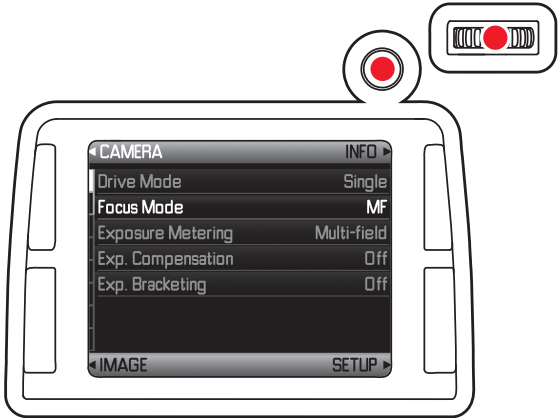
Quick access to menu functions

For quick operation, you can use the buttons (1.25), (1.24), (1.22), (1.21) and the depth of field preview button (1.4) to directly call up up to five of the most important or frequently used menu functions.

To do this, first determine which menu function you want to access using each individual button.

Setting the function / Assigning the buttons

1. In the SETUP menu (see p. 17/26) select, Custom Functions ((5.31), and
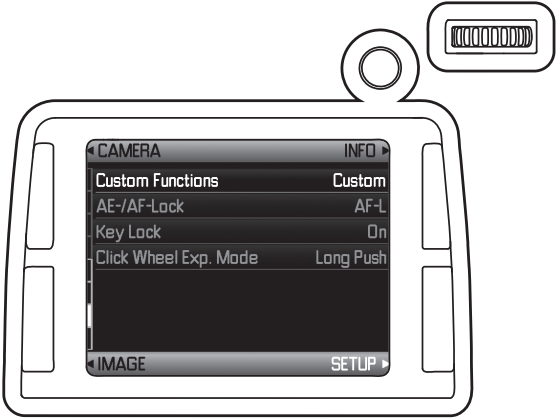
2. in the relevant submenu, whether or not you want to use the function - Custom / Off.
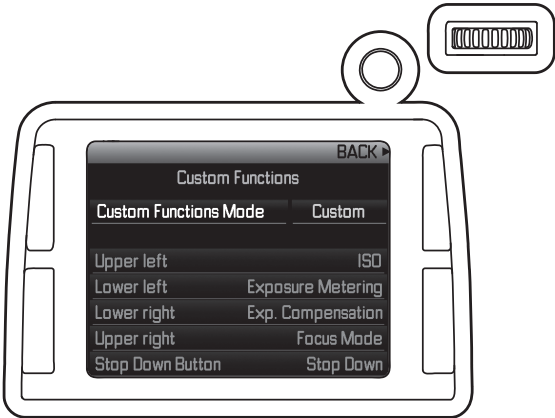
3. Then select the desired button.
   • Three out of the total of 16 (menu) functions (see p. 16/17) available for selection appear in a short list.
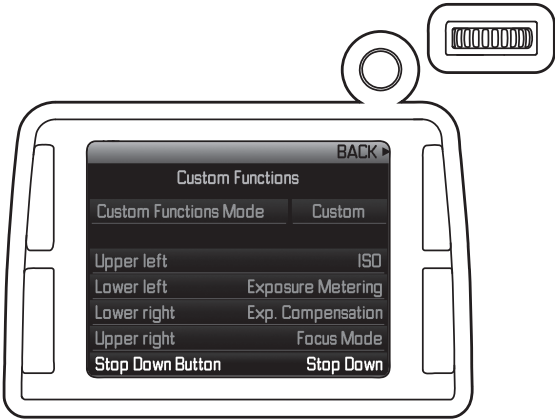
4. Select the function you want to directly select or execute using the button selected in step 3, or Off if you do not want to make a quick assignment.
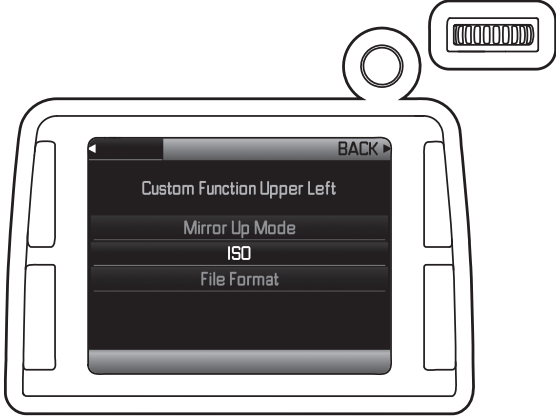
The other buttons are assigned in the same way.

Calling up the selected menu functions

You can then directly call up the set (menu) functions at any time by pressing (≥1s) the buttons (1.25), (1.24), (1.22), (1.21) and the depth of field preview button (1.4) and then make further settings or execute the function.

Note:

In their default settings, the buttons are assigned as follows for quick access:

Button (1.22):   **Focusing** (5.2)

Button (1.23):   **Exposure compensation** (5.4)

Button (1.25):   **Exposure metering** (5.3)

Button (1.26):   **ISO** (5.9)

Depth of field
preview button (1.4):   **Stop Down**

PRESETS

BASIC CAMERA SETTINGS

Menu language
The default setting for the language used in the menu system is English. German, French, Italian, Spanish, Russian, Japanese, traditional and simplified Chinese can all be selected as alternative menu languages.

Setting the function
1. In the SETUP menu (see p. 17/26), select Language (5.40), and
2. then the desired language in the submenu.
   • Apart from a few exceptions (button labels, short designations), the language of all texts is changed.

Date and time

Date
There are 3 options available for the sequence of the date.

Setting
1. In the SETUP menu (see p. 17/26), select Date (5.38), and
2. call up the submenu. It consists of the 2 items Setting and Format.
3. Select Setting.
   • A further submenu is displayed – Date Setting – containing the three columns Year, Month and Day.
4. Turn the click wheel (1.18) or press the joystick (1.17) up or down to adjust the numbers and the months and press the click wheel or the joystick to the left, right or inwards to switch between the columns.
5. After setting all three columns, press the click wheel or joystick inwards to confirm and save.
   • The list of menu items is displayed again.
6. To change the display format, select Date again, and
7. then select Format in the submenu.
   • The three possible sequences are displayed – Day/Month/Year, Month/Day/Year, and Year/Month/Day.
8. The setting is made and confirmed in exactly the same way as described in points 3 and 4.

Time
The time can either be shown in 24-hour or 12-hour format.

Setting
In the Time menu item (5.39) the settings for the two groups of figures and the display format are made in the Format and Setting items, as described in the previous section for Date.
By contrast, the Time Zone/Auto Time item has an additional submenu containing the items GPS Auto Time (only available with active GPS function), Time Zone (only available with inactive GPS function), and Daylight Saving Time.
If GPS Auto Time is activated, the time set on the camera is continuously updated according to the GPS signals received (see p. 51).

Note:
Even when no battery is inserted in the camera or the battery is flat, the date and time settings are maintained by a built-in back-up battery for about 3 months (see also "Charge level displays", p. 21). However, after that time the date and time must be set again as described above.

Automatic power off
This function turns the Leica S off automatically after a pre-set time. This is the equivalent of setting the main switch to the OFF position (1.15a, see p. 25).

Setting the function
1. In the SETUP menu (see p. 17/26), select Auto Power Off (5.28), and
2. then the desired function and duration.

Note:
Even if the camera is in standby mode, i.e. the displays have gone out after 12s, or the active Auto Power Off function has turned it off, it can be restarted at any time by pressing the shutter release button (1.1).

Signal tones

On the Leica S, you can decide whether you want messages or autofocus operation (see p. 37) to be acknowledged by acoustic signals – two volume levels are available – or whether you prefer the camera to operate largely silently.

A beep is used as an acknowledgement, and can be activated individually in autofocus mode to confirm that the setting has been made and to indicate a message.

Note:
By factory default, the signal tones are deactivated.

Setting the functions
1. In the SETUP menu (see p. 17/26), select Acoustic Signal (5.29), and
2. call up the submenu. It consists of the 3 items Volume, AF Confirmation and Warnings.
3. Select Volume, and
   • A further submenu appears, containing two options High and Low.
4. then the desired function in this submenu.
   • After confirmation, the initial monitor screen appears again.
5. In the other submenus, choose whether or not you want to activate the tones for the respective functions.

If you select On
For AF Confirmation a signal sounds as soon as the focus is set correctly, either automatically or manually, i.e. in conjunction with the indicator (2.7b) lighting up in the viewfinder (see p. 10).
For Warnings a signal sounds for all messages and warnings that appear in the monitor (1.23), and when the self timer function is used (see p. 46).

If you select Off for Warnings
Even if you select Off, an acoustic warning signal will sound in two situations:
- If the cover (1.19) of the memory card slot is opened while transferring data (see p. 21/62)
- If the shutter will close again at the end of the sensor cleaning process (see p. 68).

Monitor and top panel display

The Leica S has two displays:
- a colored OLED (organic light emitting diode) display (1.12), and
- a large 3" liquid crystal color monitor (1.23).

The top panel displays shows (see "Displays / In the top panel display", p. 11) the most important basic information about the status of the memory card(s) and the battery, as well as for exposure control.

The monitor is primarily used for viewing pictures recorded on the memory card(s) and reproduces the entire field of view plus the selected data and information (see "Displays / In the monitor", p. 12). You also have the option of calling up the following displays:
In review mode in addition to the picture
- a histogram (4.3), (see p. 13/57)
- indication of areas that lack definition as they are too bright or too dark (see "Clipping").
- additional picture data (4.4), (see p. 14/57)
  In recording mode, a comprehensive list of the most important picture parameters currently set (see "Displays/In the monitor/4.1 Picture data display", p. 12).

Both displays can be adapted to the relevant situation, i.e. the prevailing lighting conditions: The top panel display has adjustable brightness, while the monitor also has backlighting. The brightness of the monitor is automatically adjusted depending on the external brightness. This is done by the sensor (1.28).

Setting the functions
1. In the SETUP menu (see p. 17/26) select, Monitor / Display (5.27), and
2. in the first submenu, whether you want to set the monitor – Back Plane or the top panel display – Top Cover.

To set the monitor:
3. In the second submenu, select whether you want to set the Brightness or Backlight and
4. finally set the desired level in the relevant submenus. Five levels are available for each, with an additional automatic setting for Backlight.

To set the top panel display:
5. In the second submenu, select whether you want to set the brightness or the Stand-by time, and
6. finally set the desired level or display time in the relevant submenu. Three levels are available for each.

BASIC PICTURE SETTINGS

File format

Two file formats are available for recording the picture data DNG and JPEG. You can select, whether your picture data

a. is to be saved in only one of these formats, or

b. simultaneously in both (i.e. two files are always created for each
   picture).

Setting the function

1. In the IMAGE menu (see p. 16/26), select File Format (5.10), and

2. then the required format(s) or combination in the submenu.

Notes:

• The standardized DNG (Digital Negative) format is used to store the raw
  picture data.

• The remaining number of pictures shown in the monitor does not necessar-
  ily change after every picture. This depends on the subject; with JPEG files
  very fine structures result in higher data volumes, homogeneous surfaces
  in lower volumes. The details in the table are based on an average file size
  for the set resolution. The file sizes are often smaller, depending on the
  picture content and the compression rate, which means that the remaining
  memory capacity is then greater than previously calculated and displayed.

Compression rate

You can select different compression rates independently for the two file formats. For DNG format, totally loss-free compression of the picture data or uncompressed recording are available, while for JPEG format, you can select JPEG fine or JPEG basic.

Setting the function

1. In the IMAGE menu (see p. 16/26), select DNG Compression (5.11), or File
   Format (5.10), and

2. then Off or On and the desired compression rate in the relevant submenus.

Note:

A high compression rate such as for JPEG basic can result in very fine structures in the subject being lost or incorrectly reproduced (artifacts; e.g. "stepped" diagonal edges).

JPEG resolution

While in DNG format the full resolution of 37.5MP is used, with the JPEG for-mats you can also use two lower resolutions.

Setting the function

1. In the IMAGE menu (see p. 16/26), select JPEG Resolution (5.12), and

2. then 37.5MP, 9.3MP or 2.3MP in the submenu.

White balance

- Auto – For automatic control, which provides neutral results in most situations,
- Eight fixed presets for the most frequent light sources,
  - ❋ e.g. for outdoor pictures in sunshine,
  - ☁ e.g. for outdoor pictures in overcast conditions,
  - ⛰ e.g. for outdoor pictures with the main subject in shadow,
  - ☀ e.g. for indoor pictures with (prevailing) incandescent lamp light
  - ❋ e.g. for indoor pictures with (prevailing) light from halogen metal vapor lamps (HMI)
  - ⊞ e.g. for indoor pictures with (prevailing) light from fluorescent tubes with warm light color
  - ⊞ e.g. for indoor pictures with (prevailing) light from fluorescent tubes with cool light color
  - ⚡ e.g. for pictures with (prevailing) electronic flash,
  - ⚲ Greycard – for manual setting by measurement, and
- Color temperature [1] – for a directly adjustable color temperature value.

Note:
When using the Leica SF 58 or electronic flash units that meet the technical requirements of System Camera Adaption (SCA) for the System 3002 and with an SCA-3502 adapter (version 5 onwards), the white balance can be set to Auto to achieve correct color reproduction.
However, if other flash units that are not specially designed for the Leica S are used, the ⚡ setting should be used.

Setting the function

Automatic and fixed settings

1. In the IMAGE menu (see p. 16/26), select White Balance (5.13), and
2. then the desired function in the submenu.

Direct color temperature setting

You can directly set values between 2000 and 13100 (K[1]) (from 2000 to 5000K in increments of 100, from 5000 to 8000K in increments of 200 and from 8000 to 13 100K in increments of 300). This provides you with a broad scope, covering most of the color temperatures that can occur in practice and within which you can adapt the color reproduction very sensitively to the existing light color and/or your personal preferences.
1. In the IMAGE menu (see p. 16/26), select White Balance (5.13),
2. the Color temperature option in the submenu, and
   - A further submenu appears – White Balance Kelvin-Setting showing the value to be set, which is indicated by a red outline.
3. then the desired value.

Manual setting by metering

1. In the IMAGE menu (see p. 16/26), select White Balance (5.13), and
2. then the Greycard option in the submenu.
3. Press the click wheel (1.18) or the joystick (1.17) inwards or to the right
   - The message Attention Please take a picture for setting the white balance appears in the monitor.
4. Take the picture, making sure that the image field contains a white or neutral gray (reference) surface.
   - The monitor shows
     - the image based on the automatic white balance setting
     - cross hairs in the center of the image
     - the button functions valid in this situation – PREVIEW (4.1.11) and BACK (4.1.12)
5. Press the joystick (1.17) in the desired direction to move the cross hairs to the subject detail you want to use as the basis for the new white balance setting (e.g. the reference surface mentioned above).
6. Press the PREVIEW button or press the joystick inwards.
   - The color reproduction of the picture is adjusted accordingly and the button function valid in this situation – SAVE (4.1.13) - also appears.
7. You can now either
   - apply this new white balance setting - by pressing the SAVE button,
     - The monitor shows the message Whitebalance is set
   - or make any number of further settings, as described under 3. - 6.
     - In each case, the message described under 3. appears in the monitor.

Note:
In parallel to a saved white balance setting, the corresponding picture is also always saved, i.e. in addition to the unchanged original picture.

A value set in this way remains saved for and will be used for all pictures until it is superseded by a new metered value or you use one of the other white balance settings.

[1] All color temperatures are specified in Kelvin.

ISO sensitivity

The ISO setting on the Leica S allows the shutter speed/aperture value to be adjusted to meet the requirements of the relevant situation, in six steps.
As well as the fixed settings, the Leica S also features the Auto[1] function, in which the camera automatically adjusts the sensitivity to the ambient brightness.
However, when using the function it is also possible to specify priorities, for example for compositional reasons. This enables you to limit the range of sensitivities used and also to set the shutter speed above which the automatic increase in sensitivity is activated.

Notes:

• In digital photography, the higher sensitivities generally result in an increase in noise. This must be taken into account when thinking about picture quality.
• For series exposures (see p. 36), bear in mind that the frame rates will be slightly slower with higher sensitivities.

Setting the function

1. In the IMAGE menu (see p. 16/26), select ISO (5.9), and
2. call up the submenu. It contains the available ISO values and the Auto option.

To set the sensitivity manually

3. Select the desired value.

To set the sensitivity automatically

4. Select Auto.
   • A further submenu appears, containing three options OK, Set Maximum ISO and Set Maximum Exposure Time.

To use unrestricted automatic setting

5. Select OK in this submenu.
   The automatic setting uses all sensitivities, as well as shutter speeds between $^1/_2$ s and $^1/_{500}$ s.

To restrict the automatic setting range

6. Select Set Maximum ISO and/or Set Maximum Exposure Time in this submenu.
   • For Set Maximum ISO a list of the available values appears, and for Set Maximum Exposure Time a further submenu appears containing the alternatives 1/f and Manual Setting.

7. In the Set Maximum ISO list, select the highest sensitivity to be used and thus the range in which the automatic setting will operate, or

8. in the Set Maximum Exposure Time submenu, select either 1/f, if you want to leave it up to the camera to ensure that shutter speeds that prevent blurring are used, or Manual Setting.
   For, 1/f the camera only switches to a higher sensitivity if the shutter speed would fall below the $^1/_f$ threshold due to a lack of brightness, e.g. at slower speeds than $^1/_{60}$ s with a 70mm lens.

9. In the Manual Setting list, select the slowest shutter speed you want to use (1/2s - 1/500s; in whole steps).

[1] The function is not available when using flash units.

Note:

The functions and settings described in the next two sections refer exclusively to pictures in one of the JPEG formats. If one of the two DNG file formats is set, these menu functions are not available.
Changes can be made later on a computer.

Picture properties/Contrast, sharpness, color saturation

All three picture properties can be adjusted – independently - to three different levels using the menu, so that you can set the optimum values for any situation, i.e. the prevailing lighting conditions. In the case of Saturation also B & W can be selected as a fourth option.

Setting the functions

1. In the IMAGE menu (see p. 16/26), select Contrast (5.15), or Sharpness (5.16), or Saturation (5.17), and
2. then the desired level (Low, Standard, High) in the submenu.

Working color space

The Leica S allows you to set one of three color spaces - sRGB, Adobe RGB or ECI RGB.

Setting the function

1. In the IMAGE menu (see p 13/26), select Color Management (5.14), and
2. then the desired function in the submenu.

Storing picture data / memory card management

If two memory cards are inserted (see p. 21), on the Leica S you have the option of selecting,
- whether picture data is to be stored on one of the two cards first until its full capacity is reached and then on the other card - Sequential, or
- always to both cards simultaneously - Parallel, or
- whether picture data is to be transferred directly to a computer connected by a cable - External.

Setting the function

1. In the SETUP menu (see p. 17/26), select Data Storage (5.18), and
2. then the desired function in the submenu.

Notes:

• If Sequential is selected:
  - The picture data is first stored on the CF card and, once its capacity has been reached, on the SD/SDHC/SDXC card.
  - If only an SD/SDHC/SDXC card is inserted, the picture data is stored there.
• This applies regardless of the set data formats (see p. 32).
  If Parallel and both file formats are selected:
  - The DNG data is always stored on the CF card and the JPEG data on the SD/SDHC/SDXC card.
• If only one card is inserted (regardless of which), all picture data is stored on it.
• As soon as the camera is connected to a computer, it switches automatically to External, and reverts back to the original setting as soon as it is disconnected again.

RECORDING MODE

SHUTTER RELEASE BUTTON

The Leica S has a three-stage shutter release button (1.1):

1. Briefly tapping it activates the distance and exposure metering systems, as well as the displays in the viewfinder and on the top panel.

   Holding the shutter release button at this pressure point keeps the metering systems and displays active.

   When the shutter release button is released, the metering systems and displays remain active for around 12s.

Notes:
- If review mode was previously set (see p. 56), tapping the shutter release button switches the camera back to recording mode, and if it was previously in standby mode (see p. 30), it is reactivated, i.e. metering systems and displays are turned on.
- The shutter release button is locked
  - if the internal buffer memory is temporarily full, e.g. after a series of pictures (also applies if no memory card is inserted), or
  - if the memory card(s) inserted is/are full.

2. Pressing the shutter release button to the pressure point and holding it in this position stores the metered exposure value for spot and center-weighted metering in **A**, **T** and **P** modes (see p. 44/45). When using autofocus in **AFs** - Sharpness priority - mode (see p. 37) the focus setting is saved at the same time. Letting go of the shutter release button enables new measurements to be carried out.

Note:
You can also use the menu to set the joystick (1.17) to store the metered exposure value and/or the automatic focus setting (see p. 39).

3. Pressing further releases the shutter or starts any preselected self timer delay time (see p. 46).

Series exposures

You can not only use the Leica S to take single pictures but also to produce a series of pictures.

Setting and using the function

1. In the **CAMERA** menu (see p. 10/26), select **Drive Mode** (5.1), and
2. then **Continuous** in the submenu.
3. The subsequent function is then determined by how you operate the shutter release button:
   - A series of pictures is taken for as long as you hold the shutter release button all the way down (and the capacity of the buffer memory or the memory card(s) is sufficient).
   - If you press the shutter release button briefly, the camera continues to take single pictures.

Notes:
- The camera's buffer memory only allows a limited number of pictures to be taken in a series (see p. 73). When you press the shutter release button to the pressure point or during a series of pictures, the display in the viewfinder (2.10a) indicates how many (more) pictures are possible in a series.
- Regardless of how many pictures have been taken in a series, both review modes (see p. 56) initially show the last picture in the series or the last picture in the series saved on the currently active card (see p. 60), if not all of the pictures in the series have been transferred from the internal buffer memory to the relevant card yet.

  Details of how to select the other pictures in the series and further options in the review modes are described in the corresponding sections starting on p. 56.

DISTANCE SETTING

With all S lenses, the Leica S allows you to choose between manual or automatic distance setting. The autofocus system determines the distance to the parts of the subject in the center of the image field, which is marked by the cross on the focusing screen.

Regardless of the mode, the display (2.7) in the viewfinder shows the relevant setting:

- The left triangle indicates that the set distance is too long (only appears in manual mode or with manual override of autofocus)
- The center dot indicates a correct setting (continuously lit), or that the system cannot determine a distance (flashing)
- The right triangle indicates that the set distance is too short (only appears in manual mode or with manual override of autofocus)
  Further details of the displays can be found on p. 10.

Note:
The metering system works passively based on contrasts, i.e. differences between light/dark in the part of the subject you aim at. Thus, it depends on the subject having a certain minimum brightness.

Setting the mode
1. In the CAMERA menu (see p. 16/26), select Sharpness (5.2), and
2. then, in the associated submenu, the desired option.

MANUAL SETTING - MF

Turn the distance setting ring (1.8) on the lens until your subject or the most important part of the subject is shown sharply in the viewfinder on the focusing screen.

Note:
- Even if setting the focus manually, you can use the joystick (1.17) at any time to activate autofocus mode (see next section and information about the function of the joystick on p. 39).
- The Leica S is supplied with a uniform ground glass focusing screen as standard, which can be used to reliably focus on parts of the subject across the entire image field. This is suitable for most photographic situations and subjects. It is particularly advantageous when using longer focal lengths and in the macro range.
  Other focusing screens are available as accessories (see p. 65), which provide optimum settings for different applications and are easy to exchange.

AUTOMATIC SETTING

Two autofocus modes are available. In both of them, the setting procedure is started by tapping (1st pressure point, see p. 36) the shutter release button (1.1).

AFs (SINGLE) = SHARPNESS PRIORITY

The part of the subject you aim at is focused.
- The procedure is then ended, even if the shutter release button is held at the 1st pressure point.
- The setting is stored for as long as the shutter release button is held at the 2nd pressure point.
- Before the focus is set, the shutter cannot be released even by pressing the shutter release button all the way down.

AFc (CONTINUOUS) = SHUTTER RELEASE PRIORITY

The parts of the subject you aim at are focused.
- The procedure is continued for as long as the shutter release button is held at the 1st or 2nd pressure point. During this time, the setting is corrected whenever the metering system detects other objects at other distances, or the distance from the camera to the part of the subject you are aiming at changes.
- The only way to store a setting is to press the joystick inwards (see p. 39).
- Even if none of the subject is in focus, you can release the shutter at any time.

Note:
As well as the shutter release button, you can also use the joystick (1.17) to store an AF setting (see p. 39).

EXPOSURE METERING

EXPOSURE METERING METHODS
The Leica S provides three different exposure metering methods:

Setting the function
1. In the CAMERA menu (see p. 16/26), select Exposure Metering (5.3), and
2. then, in the associated submenu, the desired option.

Spot metering - ▣
For spot metering, only the center of the image field is detected and evaluated. The area is indicated by circle in the center of the focusing screen.

Center-weighted metering - ▣
This metering method takes account of the entire image field, although the parts of the subject situated in the center have more influence on the exposure value calculation than the areas at the margins.

Multiple field metering - ▣
This metering method is based on recording five metered values. One value is determined in a field in the center of the image, the other four in the surrounding fields. The five metered values are used for calculation in an algorithm appropriate to the situation, resulting in an exposure value adjusted to correctly reproduce the assumed main subject.

METERING MEMORY LOCK
The Leica S records
- different parts of the subject, depending on the metering method, for exposure metering, and gives them a different weighting,
- only part of the subject for autofocus metering (see p. 37).

The values are initially always stored using the shutter release button (1.1, see p. 36). Depending on the menu settings, the joystick (1.18) can also be used to retain one of the (stored) settings when the shutter release button is released.

In contrast to the shutter release button, this stores the relevant settings not just for one picture but for as long as it is held down, i.e. possibly for several pictures.

The AE-/AF-Lock menu item (Automatic Exposure / Autofocus) is used to select the assignment of the functions.

Storing with the shutter release button
1. Aim the circle in the viewfinder at the area to be metered.
2. Press the shutter release button (1.1) to its 2nd pressure point. As long as the button is held at this point, the value is stored.
3. In the automatic exposure modes P, A and T (see p. 44/45) the light balance (2.6) appears and indicates the variation from the stored metered value.
   If the aperture value or the shutter speed is changed during this time, the other value adjusts accordingly and is displayed.
4. While holding down the shutter release button, decide on the final composition and
5. release the shutter.

Metering memory lock is canceled when the shutter release button is let go from the pressure point.

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[1] Not all focusing screen versions have this circle (see p. 66).

Storing with the joystick

As an alternative to the shutter release button or to split the task, the focus and exposure settings can also be stored by pressing the joystick inwards. The functions of both controls are specified in the menu.

Setting the function

1. In the SETUP menu (see p. 17/26), select AE-/AF-Lock (5.32), and
2. in the submenu first choose whether want to set the function for the AF or MF mode specified using the menu.

In autofocus mode

3. Select one of the following options in the corresponding submenu:
   – AF-L (AF Lock)
   The shutter release button stores the exposure and autofocus settings. Keeping the joystick pressed (1.17) maintains storage of the autofocus setting even if you let go of the shutter release button.
   – AE-L (AE Lock)
   The shutter release button stores the exposure and autofocus settings. Keeping the joystick pressed (1.17) maintains storage of the exposure setting even if you let go of the shutter release button.
   – AF-L + AE-L
   The settings initially stored using the shutter release button are retained for as long as the joystick (1.17) is kept pressed.

In MF mode

If you are setting the focus manually, you can still use the joystick to activate AF mode temporarily, i.e. for the current picture, and/or store the exposure, depending on the setting.

3. Select one of the following options in the corresponding submenu:
   – AFs On (Autofokus single)
   Press the joystick (1.17) inwards to activate this AF mode for one picture. Any focus setting made subsequently is retained until you change it by manual adjustment or pressing the joystick again. The exposure and autofocus settings are stored by pressing the shutter release button (1.1) to the pressure point.
   – AFs On / AE-L
   As for AFs on, but pressing the joystick also stores the exposure setting. The autofocus setting is still stored using the shutter release button.
   – AFc On (Autofocus continuous)
   Pressing the joystick (1.17) activates this AF mode for one picture. A focus setting is retained even when the joystick is released, until you change it by manual adjustment or pressing the joystick again. The exposure setting is stored by pressing the shutter release button to the pressure point, but the autofocus setting is not.
   – AFc On / AE-L
   As for AFc on, but pressing the joystick simultaneously stores the exposure setting. The autofocus setting cannot be stored.
   – AE-L
   Pressing the joystick (1.17) stores the exposure setting.

EXPOSURE COMPENSATION

Entering and canceling an exposure compensation
1. In the CAMERA menu (see p. 16/26), select Exp. Compensation (5.4).
   • A scale appears in the monitor instead of a submenu, with an EV value indicated in red and a white triangle to indicate the relevant setting. If they are a value of 0, this means that the function is deactivated.
2. Set the desired value in the submenu by turning the click wheel (1.18) or pressing the joystick (1.17) to the left or right.
   • In the initial menu list, the set compensation is indicated by EV+X[1].

The viewfinder shows

• the corresponding warning symbol (2.8) and the compensation value on the light balance (2.6)

The top panel display shows

• + or – (3.9), depending on the compensation direction

Notes:

• Once set, a compensation value is retained even if the camera is turned off.
• This menu function can also be called up directly by pressing and holding the corresponding button (1.23) (see p. 29).

Important:

An exposure compensation set on the camera only influences metering of the available light, i.e. not flash light (for more information about flash photography, refer to the sections starting on p. 52).

[1] Example, either plus or minus, "X" stands for the relevant value

BRACKETING

The following are available:

- 2 numbers of pictures: 3 or 5
- 4 graduations: 0.5EV, 1EV, 2EV and 3EV

Setting the function

1. In the CAMERA menu (see p. 16/26), select Exp. Bracketing (5.5).
   - The submenu appears in the monitor, containing the three options Number of Frames, Aperture Stops and Automatic, with a scale below. If an exposure compensation is set at the same time, this is indicated by a corresponding value below the scale.
2. For Number of Frames, turn the click wheel (1.18) or press the joystick (1.17) to the left or right to select whether you want to take a bracketing exposure series and the number of pictures.
   - White triangles appear above the selected graduations on the scale, shown in red. They indicate the relevant exposure values.

Note:

If an exposure compensation is set at the same time, the zero exposure, i.e. the starting point of the bracketing series, corresponds to the compensated exposure value in P, A and T exposure modes (see . p. 44/45).

3. Confirm the setting by pressing the click wheel or the joystick inwards, up or down.
   - The setting for Aperture Stops is highlighted as ready for editing.
4. Select the desired graduation by turning the click wheel or pressing the joystick to the left or right.
   - The intervals and triangles displayed change positions according to the selected graduation.

Note:

- If the bracketing series exceeds the range of ±3EV - due to the combination of number of pictures and graduation - the scale division changes from ±3EV to ±6EV. The intervals and triangles displayed adjust accordingly.
- Note that both settings have to be made and confirmed, otherwise the function will not be active.

5. Confirm the setting by pressing the click wheel or the joystick inwards, up or down.
   - The setting for Automatic is highlighted as ready for editing.
6. Turn the click wheel or press the joystick to the left or right to select the desired setting, On for an automatic series of exposures after releasing the shutter once, Off for an individual shutter release for each picture.
7. Confirm the setting by pressing the click wheel or pressing the joystick inwards.
   - In the initial menu list, a set bracketing series is indicated by XEV /X[1].
8. All pictures are produced by pressing the shutter release button once or several times.

The viewfinder shows

- the corresponding warning symbol (2.8)
- the changing displays for shutter speed (2.2) and aperture (2.4) depending on the graduations

The top panel display shows

- next to the exposure mode + before the overexposed pictures, 0, before the uncorrected picture, and – before the underexposed pictures(3.9)
- the display for a bracketing series (3.14b)

The monitor shows (for picture data display, see p. 12)

- the corresponding symbol (4.1.27)

[1]Example, first "X" stands for the graduation, the second for the number of pictures

Notes:

- Depending on the exposure mode (see "Exposure control" section on) the exposure graduations are produced by changing the shutter speeds and/or apertures.
- The sequence of the exposures is: over exposure, correct exposure, under-exposure.
- When using bracketing, all AUTO ISO settings are defined (see):
  - The sensitivity determined automatically by the camera for the uncorrect-ed picture is also used for all other pictures in a series, i.e. the ISO value is not changed during a series.
  - The settings in the AUTO ISO submenus are ineffective, i.e. the camera's full shutter speed range is available.
  The working range for the bracketing series can be restricted according to the initial exposure setting.
- Regardless of this, the specified number of pictures is always taken, which may mean that several pictures in a series have the same exposure at the end of the working range.
- The function remains active until it is deactivated in the menu or the camera is turned off.

VALUES ABOVE AND BELOW THE METERING RANGE

If the level of the ambient brightness is below the camera's metering range, accurate exposure metering is not possible. Any values that are then shown in the viewfinder can lead to incorrect exposure results. For this reason, in such cases, (2.2b) appears in the viewfinder.

EXPOSURE CONTROL

SETTING THE SHUTTER SPEED AND APERTURE / SELECTING THE EXPOSURE MODE

On the Leica S, the settings for

- both the shutter speed and aperture values are made using a manual prese-
  lection,
- or the values in the 3 automatic exposure modes

using only 2 controls, the shutter speed setting dial (1.11) and the click wheel (1.18).

The relevant settings and the selected modes are displayed in the viewfinder (1.16/2), in the top panel display (1.12/3) and in the monitor (1.23/4), in the picture data display (4.1) and the INFO display (4.5) (see also the corresponding explanations and information on p. 10 and 11).

THE SHUTTER SPEED DIAL (1.11)

This dial is used to manually set the shutter speed in **m** (manual shutter speed and aperture setting) and **T** (shutter speed priority) modes.

The following speed ranges are available depending on the shutter used:

- with the camera's focal plane shutter – main switch (1.15) set to **FPS** (see p. 25) - from 6s to $^1/_{4000}$s
- with the integral central shutter on some Leica S lenses – main switch (1.10) set to **CS** (see p. 25) – from 6s to $^1/_{1000}$s. However, if slower shutter speeds than 8s (using menu, see p. 46) or faster shutter speeds are set, the camera automatically switches to the focal plane shutter.
- In both cases, half steps can also be set.

Note:

The slowest shutter speed that can be set manually (in **T** and **P**) is 6s. On the setting dial, this corresponds to the position between the last engraved shutter speed of 4s and ⚡ (for the flash sync speed).

For automatic and continuous control of the shutter speed by the camera - in **P** (Automatic program) and **A** (Aperture priority) modes – the **Auto** position must be set.

Long-time exposures up to a maximum of 125s are made using the **B** position.

When using non system-compatible flash units and the camera´s internal focal plane shutter, the setting for the fastest flash sync speed ($^1/_{125}$s = ⚡) is recommended.

CLICK WHEEL (1.18)

Turning the click wheel manually adjusts the aperture in **m** and **A** modes. Half steps are also available.

Pressing the click wheel switches between manual aperture setting and automatic control by the camera - in **P** and **T** modes.

The table illustrates the functional relationships of the two controls.

Shutter speed dial setting	Mode	Click wheel	
		Turning	Pressing
6s to $^1/_{4000}$s	Manual setting **m**	Changes the aperture value	Switches to **T**
	Shutter speed priority **T**	No function	Switches to **m**
Auto	Aperture priority **A**	Changes the aperture value	Switches to **P**
	Automatic program mode **P**	"Shifts" the preset shutter speed and aperture values (see p. 44).	Switch to **A**

As an added safeguard against inadvertent adjustment of the mode, the response time, i.e. the time for which the click wheel has to be pressed, can be extended.

Setting the function
1. In the SETUP menu (see p. 17/26), select Click Wheel Exp. Mode (5.34) and
2. then Short Push (≤1s) or Long Push (≥2s) in the submenu.

To completely safeguard against inadvertent adjustment of the mode, shutter speed or aperture, you can deactivate the function of both controls, i.e. turning and pressing does not change the settings at all in picture mode.

Setting the function
1. In the SETUP menu (see p. 17/26), select Key Lock (5.33) and
2. then the desired function in the submenu.

The top panel display shows the corresponding symbol ⊙— (3.14c)

EXPOSURE MODES

The Leica S provides you with a choice of four exposure modes.

AUTOMATIC PROGRAM - P

Setting the mode

1. Set the shutter speed dial (1.11) to **Auto**.
2. Press the click wheel (1.18) to set automatic exposure control, i.e. in this case automatic program mode.

The shutter speed and lens aperture are then calculated automatically based on the available light and continuously between 125s and $^1/_{4000}$s, or $^1/_{1000}$s when using the central shutter on some Leica S lenses, and between fully open and minimum aperture for the relevant lens.

The viewfinder and top panel display show

• **P** (2.3.a/3.8) for the selected exposure mode, and
• the automatically controlled aperture (2.4/3.11) and shutter speed values (2.2a/3.12).

Notes:

• If the automatic sensitivity setting (see p. 34) is activated at the same time, even with a fully open aperture the shutter speed will only be extended beyond $^1/_{Focal\ length}$ if the maximum set sensitivity is reached.
• With very little light or extreme brightness, the available shutter speed/ aperture range may no longer be sufficient. In such extremely rare cases, the viewfinder shows **LO** (2.2b) for underexposure (which may also be a warning message for a value below the metering range, see also "Working below the metering range", see p. 41), or (2.2b) for overexposure. It is then no longer possible to correctly meter the exposure.

Program shift

The program shift function on the Leica S enables you to change the shutter speed/aperture combination set by the automatic program, while the overall exposure, i.e. the brightness of the image, remains unchanged.

Setting the function

Turn the click wheel (1.18)
- to the right for larger apertures (lower values) or faster shutter speeds
- to the left for smaller apertures (higher values) or slower shutter speeds.

The viewfinder and top panel display show

• **P** (2.3.a/3.8) for the selected exposure mode,
• **s** (3.10) in the top panel display to indicate use of the shift function, and
• the automatically controlled aperture (2.4/3.11) and shutter speed values (2.2a/3.12), which change inversely.

Note:

Shift settings are retained
- after taking a picture
- beyond the exposure metering system's 12s retention time (see p. 36, but not
- when you switch to a different exposure mode (**A**, **T**, **M**)
- when you turn the camera off and back on (including **Auto power Off**).
This means that in these cases when you use the automatic program mode again the camera initially always sets the default shutter speed and aperture setting.

APERTURE PRIORITY - A

Setting the mode

1. Set the shutter speed dial (1.11) to **Auto**.
2. Press the click wheel (1.18) to set manual exposure control, i.e. in this case aperture priority mode.
3. Turn the click wheel to set the desired aperture.

The shutter speed is then calculated automatically based on the available light and continuously between 125s and $^1/_{4000}$s, or $^1/_{1000}$s when using the central shutter on some Leica S lenses.

The viewfinder and top panel display show

• **A** (aperture priority) for the selected exposure mode (2.3.b/3.8),
• the manually set aperture value (2.4/3.11) , and
• the automatically set shutter speed value (2.2a/3.12)

Notes:

• If automatic sensitivity setting is activated at the same time (see p. 34), the control range for aperture priority is extended.
• With very little light or extreme brightness, the available shutter speed/ aperture range for the preselected aperture value may no longer be sufficient. In such extremely rare cases, the viewfinder shows **LO** (2.2b) for underexposure (which may also be a warning message for a value below the metering range, see also "Working below the metering range", see p. 41), or (2.2b) for overexposure. It is then no longer possible to correctly meter the exposure.

SHUTTER SPEED PRIORITY - T

Setting the mode
1. Set the shutter speed dial (1.11) to the desired exposure time.
2. Press the click wheel (1.18) to set automatic exposure control, i.e. in this case shutter speed priority mode.

The lens aperture is then controlled automatically based on the available light and continuously between a fully open and minimum aperture for the relevant lens.

The viewfinder and top panel display show
- **T** (shutter speed priority) for the selected exposure mode (2.3.c/3.8)

- the automatically controlled aperture value (2.4/3.11)

- the manually set shutter speed value (2.2a/3.12)

Notes:
- If automatic sensitivity setting is activated at the same time (see p. 34), the control range for shutter speed priority is extended.
  By contrast, any maximum shutter speed set as part of the automatic sensitivity setting is ineffective.
- With very little light or extreme brightness, the available aperture range of the lens you are using may no longer be sufficient for the selected exposure time. Set a different shutter speed if possible. However, a correct exposure is normally still achieved in such cases, by automatic setting of the appropriate shutter speed, i.e. by "overriding" your manual selection. LO (2.2b) may appear as a warning message to indicate that you are below the metering range (see p. 41). It is then no longer possible to correctly meter the exposure.
- If the shutter speed dial is set to ϟ $(=^1/_{125}s)$ the camera switches to **M** (see next section). As soon as a different shutter speed is set, it switches back to **T**.

MANUAL APERTURE AND SHUTTER SPEED SETTING - M

Setting the mode
1. Set the shutter speed dial (1.11) to the desired value.
2. Press the click wheel (1.18) to set manual exposure control , i.e. in this case manual mode.
3. Turn the click wheel (1.18) to set the desired aperture.

The viewfinder and top panel display show
- **M** for the selected exposure mode (2.3.d/3.8),

- the manually set aperture (2.4/3.11) and shutter speed values (2.2a/3.12), and

- a light balance (2.6), which assists in adjusting the exposure.

The light balance shows the deviation of the set shutter speed/aperture combination from the metered exposure value. The display clearly shows the range ±3 EV in $^1/_2$ EV steps. Larger deviations are shown by flashing of the outer markings on the light balance.
To achieve the correct exposure according to the result of the exposure metering, the aperture and/or shutter speed should be adjusted until the zero marking lights up on the light balance.

Notes:
- If automatic sensitivity setting is activated at the same time (see p. 34), the last manually set sensitivity is used.
- Any maximum shutter speed set as part of the automatic sensitivity setting has no effect.

THE B SETTING

With the **B** setting, the shutter remains open
- either for as long as the shutter release button is held down,
- or for the time you have previously set
  (in both cases for a maximum of 125s).

To determine the exposure time (times above 8s are available):
1. Press the click wheel (1.18),
   - The monitor shows the setting menu and the times available for the set sensitivity. A triangle and the red marking indicate the current setting.
2. Turn the click wheel or press the joystick to the left or right to select the desired exposure time, or **B** if you do not want to determine a certain time.
3. Confirm your setting by pressing the click wheel again or the joystick inwards.
   - The setting menu disappears.

If an exposure time is determined, the shutter release button does not have to be held down.

The viewfinder shows
- instead of a shutter speed **bul b** (2.2c)

The top panel display shows
- **B** (3.13)
- the set time or **0**, if none is determined, (3.12)
- after opening the shutter
  - if no time was determined, the elapsed exposure time,
  - if a time was determined, the remaining time, both in seconds

In conjunction with the self timer, an additional T function is also available: If you set **B** and activate the self-timer by pressing the shutter release button, the shutter opens automatically after the selected delay time. It then remains open until you press the shutter release button a second time – you do not need to hold it down. This enables you to largely prevent any blurring caused by pressing the shutter release button, even with long exposures. The exposure meter remains off in both cases.

Notes:
- The longest possible exposure time depends on the set sensitivity: ISO100 -125s / ISO200 -60s / ISO400 -32s / ISO800 -16s / ISO1600 -8s
- The exposure time setting is retained until
  - either **B** is selected again in the setting menu,
  - or the camera is turned off.
- Long exposures can be associated with picture noise. To reduce this annoying phenomenon, after pictures taken with long exposure times the Leica S automatically takes a second "black picture" (with the shutter closed). The noise present in this parallel picture is then digitally "subtracted" from the data set for the actual picture.
- This doubling of the "exposure" time can be significant in particular with extended exposure times, and must be allowed for. During this time the camera should not be switched off.
- For long-time exposures, attaching the eyepiece cover (G) is recommended. This prevents unwanted additional exposure.
- For shutter speeds of > $^1/_2$s, the noise reduction messages appears in the monitor.
- Long-time exposures with the **B** setting are produced exclusively using the camera's internal focal plane shutter, even if the main switch (1.15) is set to **CS** (see p. 25).

TAKING PHOTOGRAPHS WITH THE SELF-TIMER

You can use the Leica S's self-timer function to take pictures with a delay of either 2 or 12s.

Setting / using the function
1. In the **CAMERA** menu (see p. 10/26), select **Drive Mode** (5.1), and
2. then the required delay time in the associated submenu.
3. To start the process, press the shutter release button all the way down (see also "Shutter release button", p. 36).

Note:
During the countdown, you can restart the delay time, i.e. extend it, by pressing the shutter release button again.

Process
With 2s delay time:
Exposure metering is carried out first, in autofocus mode the focus is set and the mirror flips up. The delay time then begins.

With 12s delay time:
The delay time begins immediately after the shutter release button is pressed and the mirror flips up 2s before the picture is taken.

Displays
The elapsed delay time is indicated:
- on the monitor (1.23) by the display **Releasing in 12s** and a countdown of the remaining time until the picture is taken.
- by the LED on the front of the camera (1.2) – for the first 10s with a 12s delay time – flashing slowly at first, then rapidly.

Canceling the function

A self-timer delay time in progress can be canceled

– by turning off the camera, i.e. by turning the main switch (1.15) to the OFF position,

– during the first 10s of a 12s self-timer delay time by pressing the button (1.22) – in this case labeled ABORT.

If you no longer want to use the self-timer, it must be deactivated in the menu. The function is also deactivated by turning off the camera.

Note:

If the self-timer function is set and mirror pre-release is activated at the same time (see next section), the shutter is released after the selected delay time, i.e. without the need to press the shutter release button again.

MIRROR PRE-RELEASE

To eliminate the remaining minimal effects of mirror movement and closing of the lens aperture, the Leica S includes the option of using mirror pre-release.

Setting / using the function

1. In the CAMERA menu (see p. 16/26), select Mirror Up Mode (5.8), and
2. then On or Off in the submenu.
3. Press the shutter release button all the way down, i.e. to the third pressure point (see also "Shutter release button", p. 36) to flip up the mirror.
4. Press the shutter release button all the way down again to take the picture.

Process

The first time the shutter release button is pressed, exposure metering and – in autofocus mode – focusing are first carried out, then the mirror flips up and the aperture closes to the appropriate value.

The shutter is not released and thus the actual picture is not taken until the shutter release button is pressed again.

After the exposure, the mirror moves back down into place and the aperture opens again in the normal way.

Canceling the function

The mirror pre-release process can be canceled without taking a picture after pressing the shutter release button for the first time.

This is done by turning off the camera at the main switch, i.e. turning the main switch (1.15) to the OFF position – the mirror then flips back down again.

If mirror pre-release is set, the function remains active even after turning the camera off and back on, i.e. if you want to take the next picture without mirror pre-release, the function must be set to Off in the menu.

Notes:

• The picture must be taken within 2 min of pressing the shutter release button for the first time. If not, the mirror flips back down automatically to preserve the battery capacity (without the shutter being released).

• While the mirror is flipped up, the 2 min delay time can be restarted at any time by tapping the shutter release button.

• If the self-timer function is set and mirror pre-release is activated at the same time (see previous section), the shutter is released after the selected delay time, i.e. without the need to press the shutter release button again.

DEPTH OF FIELD PREVIEW BUTTON AND DEPTH OF FIELD

On the Leica S, you can close the open lens aperture for every exposure mode to the set or automatically determined aperture value. This is done using the depth of field preview button (1.4).

The correct values remain displayed in the monitor and the top panel display. However, the exposure meter is turned off.

Prerequisites for stopping down:

1. The exposure meter has been turned on with the shutter release button (see p. 36), and
2. the shutter release button is not (no longer) being pressed.

The shutter release button is locked when the depth of field preview button is pressed.

ADDITIONAL FUNCTIONS

HORIZON
Thanks to its integrated sensors, the Leica S can display its alignment both in the viewfinder and on the monitor. While the corresponding display always appears in the viewfinder (2.1, see p. 10), the monitor display is called up as required.
This monitor display enables you to align the camera precisely in the longitudinal and transverse axis to capture critical subjects, e.g. architecture pictures from a tripod.

Setting the function
1. In the SETUP menu (see p. 17/26), select Horizon (5.30), and
2. then the desired function in the submenu.
   • A vertical scale and a horizontal bar appear in the monitor. Variations from the relevant zero positions are indicated graphically
     – by red markings – and the horizontal alignment in the longitudinal and transverse axis by a central green marking. The corresponding figures are also indicated.

Notes:
• The display accuracy is ≤1°.
• The monitor screen remains visible until it is deactivated by pressing the shutter release button or by pressing button (1.21), in this case labeled BACK.

USER / APPLICATION SPECIFIC PROFILES
On the Leica S, any combination of menu settings can be permanently stored, e.g. so that they can be retrieved quickly and easily at any time for recurring situations / subjects. A total of four memory slots are available for these combinations, as well as a factory default setting that can be retrieved at any time and cannot be changed. You can change the names of the saved profiles.
Profiles set on the camera can be transferred onto one of the memory cards, for example for use in other camera units, while profiles stored on a card can be transferred onto the camera.

Saving settings / Creating a profile
1. Set the desired functions in the menu.
2. In the SETUP menu (see p. 17/26), select User Profile (5.35),
3. select SAVE as Profile in the submenu, and
4. then the associated sub-menu the desired memory slot.

Selecting a profile
1. In the SETUP menu (see p. 17/26), select User Profile (5.35).
   • If any user profiles are saved, the profile names appear in gray, with unused memory slots in green.
2. Select the desired profile in the submenu, either one of the saved profiles or Default Profile.

Note:
If you change one of the settings for the profile currently in use --- appears instead of the name of the profile you were previously using in the initial menu list.

Renaming profiles

1. In the SETUP menu (see p. 17/26), select User Profile (5.35),
2. select Administrate Profiles in the submenu, and
3. then Rename Profiles in the associated submenu.
   • The profile number and name appear, with the number marked as ready for editing.
4. Select the profile to be renamed by turning the click wheel (1.18) or pressing the joystick (1.17) up or down.
5. Confirm your setting by pressing the click wheel or pressing the joystick inwards or right.
   • The next character is marked as ready for setting.
6. The numbers and letters in the name are changed by turning the click wheel or by pressing the joystick up or down and other characters are selected by pressing the click wheel or by pressing the joystick inwards. The available characters are upper case letters from A to Z, numbers from 0 to 9 and a space _; you can scroll through them in this order in an endless loop.
7. Confirm your setting by pressing the click wheel or by pressing the joystick inwards.

Transferring profiles from / to a card

1. In the SETUP menu (see p. 17/26), select User Profile (5.35),
2. select Administrate Profiles in the submenu, and
3. then Import Profiles from Card or Export Profiles to Card in the submenu.
   • The corresponding query appears in the monitor.
4. Confirm that you really want to import or export the profile(s) using the click wheel (1.18) or the joystick (1.17).

Note:
When exporting, all profile slots are transferred to the card, i.e. including any empty profiles. As a result, when importing profiles any existing profiles in the camera will be overwritten, i.e. deleted.

Resetting all custom settings
This function allows you to reset all custom settings previously made in the menu at once and restore the factory default settings.

Setting the function
4. In the SETUP menu (see p. 17/26), select Reset (5.36), and
5. then select No or Yes in the submenu.

Note:
This reset also affects any individual profiles defined and saved using Save As Profile (see previous section).

FOLDER MANAGEMENT
The image data on the memory cards is stored in folders, which are created automatically. The folder names always consist of eight characters - three figures and five letters. In the factory default setting, the first folder is named 100LEICA, the second 101LEICA, etc. The next available number is always used as the folder number, and a maximum of 999 folders are possible. If the number capacity has been used up, a corresponding warning message appears in the monitor.

The individual pictures are given continuous numbers up to 9999 unless a the memory card in use already contains a picture with a higher number than the last number assigned by the camera. In such cases, the numbering used on the card is continued. If the current folder contains picture number 9999, a new folder is created automatically and the numbering begins again at 0001. If the folder number 999 and picture number 9999 are reached, a corresponding warning message appears in the monitor and the numbering must be reset (see below).

On the Leica S you can also create new folders at any time, give them names of your choice and change the file names.

Creating new folders / Setting names / Resetting picture numbers
1. In the SETUP menu (see p. 17/26), select Image Numbering (5.19), and
2. then New Folder in the submenu.
   • The folder name appears (initially always XXXLEICA). The first of the five characters that can be set is marked as ready for editing.
     Characters 4-8 can be changed.

Note:
If you are using memory cards that were not formatted with this camera (see next section), the camera automatically creates a new folder.

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[1] The "X" characters are used as placeholders.

3. The numbers and letters are changed by turning the click wheel (1.18) or pressing the joystick (1.17) up or down, and other characters are selected by pressing the click wheel or pressing the joystick inwards, left or right. The available characters are upper case letters from A to Z, numbers from 0 to 9 and a space _; you can scroll through them in this order in an endless loop.

4. Confirm your settings by pressing button (1.18), in this case labeled OK or by pressing the click wheel or moving the joystick inwards after setting the last character.
   • A further submenu appears containing the query Reset image numbering?.

5. Select Yes or No.
   • Once you have confirmed your selection by pressing the click wheel or the joystick forwards, the setting menu described under 2. appears again.

Note:
You can also reset the picture numbers without creating a new folder first. To do this, select Reset in the picture numbering submenu and proceed as described in 4. and 5. above.

Changing file names

1. In the SETUP menu (see p. 17/26), select Image Numbering (5.19), and

2. then Change filename in the associated submenu.
   • The file name appears. The first character (initially always LXXXXXX1) is marked as ready for editing.
     Characters 1-4 can be changed.

3. The numbers and letters are changed by turning the click wheel (1.18) or pressing the joystick (1.17) up or down, and other characters are selected by pressing the click wheel or pressing the joystick inwards, left or right. The available characters are upper case letters from A to Z, numbers from 0 to 9 and a space _; you can scroll through them in this order in an endless loop.

4. Confirm your settings by pressing the click wheel or by pressing the joystick inwards.
   • The initial menu list appears.

FORMATTING THE MEMORY CARD(S)

It is not normally necessary to format (initialize) a memory card that has already been used. However, when an unformatted card or a card formatted in another device (e.g. a computer) is used for the first time, it must be formatted.

Important:

When formatting, all existing data on the card is not necessarily irretrievably lost.
It may be possible to access some of the data again using appropriate software. Only the data that is then overwritten by saving new data is actually permanently deleted.

Notes:

• Do not turn the camera off while memory cards are being formatted.

• If the memory card has been formatted in another device, such as a computer, you should reformat it in the Leica S.

• If the memory card cannot be formatted, you should ask your dealer or Leica Information Service (address, see p. 74) for advice.

• Even protected pictures (see previous section) are deleted when formatting the memory card.

Setting the function

1. In the SETUP menu (see p. 17/26), select Format (5.20), and

2. then which of the two cards you want to format, or both, in the submenu.
   • To prevent unintentional settings, a corresponding query appears in the monitor.

3. Press the click wheel (1.18) or the joystick forwards (1.17) to confirm that you really want to format the memory card(s).

RECORDING THE LOCATION WITH GPS

The Global Position System enables the current position of the receiver to be determined worldwide. When this function is activated, the Leica S continuously receives the corresponding signals and updates the position data. The camera writes this information - latitude and longitude, height above sea level - to the "EXIF" data.

Setting the function

3. In the SETUP menu (see p. 17/26), select GPS (5.37), and
4. then On or Off.
   - The "satellite" symbol ((4.1.17), only visible in the picture data display (4.1)) in the monitor indicates the current status:
     - Position last determined maximum of 1min ago
     - Position last determined maximum of 24hrs ago
     - Position last determined at least 24hrs ago, or no position data available

Notes on the function:

- The prerequisite for GPS positioning is to have as clear a view as possible of at least three GPS satellites (out of the total of 24, up to 9 are available from every location on earth). We therefore recommend holding the camera with the GPS antenna pointing vertically upwards (1.3).
- Make sure that the GPS antenna is not covered with your hand or any other item, particularly metal objects.
- It may not be possible to receive good signals from GPS satellites at the following locations or in the following situations. In such cases, either no positioning at all or only inaccurate positioning is possible.
  - Closed rooms
  - Underground
  - Under trees
  - In a moving vehicle
  - Close to tall buildings or in steep valleys
  - Close to high voltage cables
  - In tunnels
  - Close to mobile telephones
  - With accessories attached in the flash shoe, e.g. a flash unit

Information for safe use

The electromagnetic radiation generated by the GPS system can influence instruments and measuring equipment. Therefore, make sure the GPS function is deactivated on board an aircraft before takeoff or landing, in hospitals or in other locations where there are restrictions on wireless transmissions.

Important (legal restrictions on use):

- In certain countries or regions, the use of GPS and associated technologies may be restricted. Therefore, before traveling in other countries you should consult the relevant country's embassy or your travel agent.
- The use of GPS inside the People's Republic of China and Cuba and close to their borders (exceptions: Hong Kong and Macao) is prohibited by the law of those countries.
  Contravention will lead to prosecution by the national authorities. The GPS function is therefore deactivated automatically in these areas.

FLASH OPERATION

GENERAL INFORMATION ON FLASH EXPOSURE METERING AND CONTROL

The Leica S determines the required flash power by firing one or more ranging flashes in quick succession, fractions of a second before taking the actual picture. Immediately after this, at the start of exposure, the main flash is fired. All factors that influence the exposure (such as filters, aperture setting, distance to the main subject, reflective surfaces, etc.) are automatically taken into account.

COMPATIBLE FLASH UNITS

Connection using the flash shoe (1.14)

- All flash units and studio flash systems that comply with the currently valid ISO standard 10330 and the older DIN 19014[1] (positive polarity at X contact)

Connection using the lower LEMO® socket (1.34)

- All flash units and studio flash systems that allow control using corresponding special cables

Connection using the flash connecting socket (1.31)

- Studio flash systems and other flash units with flash cable and standard flash connector

The following flash units, when used on the Leica S, are capable of all the functions described in this manual:

- The Leica SF 58 system flash unit (see p. 65). With a maximum guide number of 58 (for ISO 100 and 105mm setting), an automatically controlled zoom reflector, an optional second reflector and many other functions, it is both powerful and versatile. Thanks to its permanently attached flash foot with additional control and signal contacts, which are used to automatically transfer a range of data and settings, it is very easy to use.
- Flash units that meet the technical requirements for System Camera Adaption (SCA) System 3002, are equipped with an SCA-3502-M5 [2, 3] adapter, allow guide number control and are HSS compatible (see p. 54). However, other commercially available flash units with a standard flash foot [4, 5] and positive center contact, and fired by the center contact (X contact, 1.14a) can also be used (without TTL flash control). We recommend the use of modern thyristor-controlled electronic flash units.

FLASH SYNC SPEED

With conventional flash technology, i.e. when setting the shutter speed dial to $\lightning$ (see p. 8) with the camera's focal plane shutter, the flash sync speed on the Leica S is $^1/_{125}$ s. If the central shutter in compatible lenses (see p. 24/65) is used, all shutter speeds up to $^1/_{1000}$s are available.

With system compatible HSS (see p. 54) flash units, all faster shutter speeds can also be used.

Studio flash systems in particular often have luminosity times that are considerably longer than the specified sync speeds. In order to take full advantage of the light quantity provided by these flash units, slower shutter speeds are recommended.

Notes:

- At all shutter speeds up to the sync speed $^1/_{125}$ s in the viewfinder (2.5b) X lights up to indicate that normal flash operation is possible at these speeds.
- If the shutter speed dial is set to $\lightning$, the defined shutter speeds then mean that the preset exposure modes may be changed, i.e. from P to T, or from H to m (see p. 42). As soon as a shutter speed is specified again, the original modes are reset.
- If you are using the Leica SF 58 (see p. 65) and faster shutter speeds are set on the camera, i.e. ≤ $^1/_{180}$ s with focal plane shutter, and ≤ $^1/_{1500}$s with central shutter, the flash unit automatically switches to HSS mode (see p. 54).

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[2] When using the SCA-3502 adapter (version 5 onwards) the white balance (see p. 33) can be set to **Automatic** for correct color reproduction.

[3] The use of flash systems from other camera manufacturers and SCA adapters for other camera systems is not recommended as their differing contact positions and assignments can result in malfunctions or even damage to the camera.

[4] If flash units not specially designed for the Leica S are used, the white balance on the camera should be manually set to $\lightning$ if required.

[5] The set aperture and the sensitivity may need to be entered manually on the flash unit.

[1] If, for example, you want to connect a studio flash system to the Leica S that does not comply with the ISO standard, contact Leica Camera AG's Customer Care department (for address see p. 74) or the customer service department of a Leica agent.

SELECTING THE SYNC SPEED / THE SYNC SPEED RANGE

The Leica S allows you to combine flash operation with the shutter speed used in the automatic program and aperture priority exposure modes to subtly adjust the lighting conditions for the relevant subject or to suit your picture composition ideas. You can choose between one automatic and several manual settings.

Setting the function

5. In the CAMERA menu (see p. 16/26), select Auto Slow Synch.. (5.6), and
6. then the automatic lens-specific setting - 1/f - or whether you want to determine a particular shutter speed yourself - Manual Setting - in the submenu.
7. In the Manual Setting submenu, set the range of shutter speeds permitted by determining the fastest speed permitted.

Notes:

- 1/f results in the slowest possible shutter speeds based on the rule of thumb for blur-free pictures taken from the hand, e.g. $^1/_{60}$ s with the Summarit-S 70mm f/2.5 ASPH. However, in the Manual Setting menu it is limited to $^1/_{125}$ s even if the focal length used is longer.
- The setting field in the Manual Setting submenu initially contains the "default setting" of 1/f.

SELECTING THE FIRING MOMENT

The Leica S allows you to choose between a flash firing moment at the beginning or the end of the exposure.
The function is available with all flash units, including non-system compatible units, regardless of whether they are mounted in the flash shoe or connected by a cable, and with all camera and flash unit settings. The displays are identical in both cases.

Setting the function

1. In the CAMERA menu (see p. 16/26), select Flash Synch Mode (5.7), and
2. then the desired option, in the associated submenu.

ATTACHING THE FLASH UNIT

When attaching a flash unit to the Leica S flash shoe (1.14), you should ensure that the foot of the flash unit is fully inserted and the clamping nut (if available) is tightened to prevent it accidentally falling out. This is particularly important for flash units with additional control and signal contacts, because if the position in the flash shoe changes the necessary contacts can be interrupted, leading to malfunctions.

Note:

Before attaching the flash, the camera and the flash unit must be turned off.

SETTINGS FOR CAMERA-CONTROLLED AUTOMATIC FLASH MODE

Once the flash unit you are using has been turned on and set to the appropriate mode for TTL operation, on the Leica S

1. the exposure metering must first be performed by gently pressing the shutter release button before taking each flash picture, so that the display in the viewfinder shows the shutter speed or switches over to the light balance. If this stage is missed out by fully depressing the shutter release button in one quick movement, the flash unit will not fire even if required.

2. set the preferred exposure mode or the desired shutter speed and/or aperture. The faster flash sync speed must be taken into account as this determines whether a "normal" flash is fired or an HSS flash.

TTL FLASH MODE

Fully automatic, i.e. camera controlled, TTL flash operation is available with the Leica S when using system-compatible flash units (see p. 52), and in all of the camera's exposure modes.

Automatic illumination control is also provided. This means that in order to ensure a balanced relationship between flash and available light at all times, the flash power is reduced by up to $1\,^2/_3$ EV as ambient brightness increases (fill-in flash). However, if the available brightness requires a faster shutter speed than the set sync speed ($^1/_{125}$ s for the focal plane shutter, $^1/_{1000}$ s for lenses with central shutter) or it is set manually, the camera will automatically switch a system-compatible flash unit to linear flash mode (HSS, see next section).

In addition, the Leica S transfers the set sensitivity and aperture to the flash unit. Provided it has the right displays, the flash unit can then automatically adjust its displayed range accordingly.

Notes:
- The settings and functions described in the following sections relate exclusively to flash units that are system compatible to the Leica S.
- An exposure compensation set on the camera (see p. 39) only influences the measurement of available light.
  If you want to simultaneously use compensation of the TTL flash exposure measurement in flash mode – in parallel or in the opposite direction, you must make this additional setting (on the flash unit).
- More details of flash use, in particular for other flash units not specially adapted to the Leica S and for different flash modes can be found in the respective instructions.

HIGH SPEED SYNC MODE

Fully automatic, i.e. camera controlled flash operation is available with the Leica S when using system-compatible flash units (see p. 52), with all shutter speeds and in all of the camera's exposure modes. It is automatically activated by the camera if the selected or calculated shutter speed is faster than the sync speed, i.e. $\leq\,^1/_{180}$ s for the focal plane shutter. If the flash unit is set correctly, this change does not require any further action by the photographer.

STROBE FLASH MODE WITH SYSTEM COMPATIBLE FLASH UNITS

This flash method, in which several flashes are emitted in succession during an exposure, is possible in all of the camera's exposure modes.

In **P** and **A** modes, the camera automatically sets the necessary shutter speed for the selected flash number and frequency. If the required shutter speed results in overexposure due to the available light, this is indicated by the light balance (2.6b).

In **m** and **T** modes, an excessively fast shutter speed is indicated by the shutter speed display flashing (2.2a/3.12) in the viewfinder and in the top panel display.

In such cases, exposure compensation can be carried out by changing the number of flashes and/or the flash frequency and/or the aperture and/or the shutter speed (with **m** and **T**).

For a successful strobe photograph, for example when several phases of one sequence of movement are recorded on one picture, the operating range of the flash unit, the number of flashes, the distance and of course the aperture are of crucial importance. You can find information about this in the instructions for your flash unit.

Note:
The HSS flash mode results in shorter ranges.

FLASH DISPLAYS IN THE VIEWFINDER WITH SYSTEM COMPATIBLE FLASH UNITS

A flash symbol (2.5a) appears in the viewfinder display on the Leica S as confirmation and to indicate different operating statuses.

- ⚡ does not appear despite the flash unit being turned on and ready:
  In such cases, the Leica S will not fire the flash unit. (e.g. because the incorrect mode is set on the flash unit)

- ⚡ flashes before taking the picture:
  The flash unit is not yet ready to operate.

- ⚡ lights up before taking the picture:
  The flash unit is ready to operate.

- ⚡ remains continuously lit after releasing the shutter:
  The flash unit is still ready.

- If a flash exposure compensation is set on the flash unit, ± (2.8) appears in the viewfinder as an indication.

FLASH USING THE FLASH UNIT´S OWN AUTOMATC MODE

When using system-compatible flash units in automatic exposure mode, the quantity of light reflected by the subject is metered and evaluated by an integrated sensor in the flash unit rather than by the camera. The exposure modes on the camera generally function in the same way as without flash. In **P** or **A**, if the flash sync speed is not reached or, in **T** or **m**, if the set speed is faster than the sync speed, the flash is not fired.

As **P**, **A** and **T** modes already produce a normally exposed photograph using the ambient light, the flash power should be reduced, i.e. a flash exposure compensation set, e.g. –1EV to –2EV. On system-compatible flash units, the aperture set on the lens is transmitted to the flash unit and used as a basis for its own automatic mode. Metering takes account of the sensitivity set on the camera and any exposure compensation set for the ambient light (camera) and the flash (flash unit).

MANUAL FLASH WITH CONSTANT FLASH POWER

If the flash unit is used in manual flash mode at full power or fixed partial power (if this can be set on the flash unit), there is no control of the flash light quantity emitted. The exposure modes on the camera generally function in the same way as without flash.

In **P** or **A**, if the flash sync speed is not reached or, in **T** or **m**, if the set speed is faster than the sync speed, the flash is not fired.

The lens aperture to be set is derived from the flash power, the sensitivity and the distance to the subject or vice versa, the partial flash power to be set is derived from the aperture, the sensitivity, the focal length and the distance to the subject (see flash unit instructions).

FLASH USING THE X-CONTACT

When you connect a non-system compatible flash unit using the accessory shoe, no information is transferred. Because the camera "cannot recognize" the flash unit, it behaves in the same way as if no flash unit were connected. The shutter speed should be manually set to match the flash sync speed $^1/_{125}$ s, or $^1/_{1000}$ s with central shutter (see p. 25), or ⚡ or to slower speeds; there is no automatic adjustment. The flash ready and control displays are inactive.

If the flash unit is equipped accordingly, the light can be controlled using its own automatic mode, (by means of its own sensor), or manually by selecting the appropriate partial light power level (see flash unit instructions).

FLASH USING THE FLASH/LOWER LEMO® SOCKET

The flash connecting socket (1.31) or the lower LEMO® socket (1.34) can be used to connect flash units and large studio flash systems using cables with a standardized flash connector or with a LEMO® connector. The LEMO® connection has an automatic locking mechanism to reliably prevent the connection from being inadvertently interrupted. A corresponding cable is supplied (see p. 67)[1].

Because the camera "cannot recognize" a flash unit connected in this way, it behaves in the same way as if no flash unit were connected. The shutter speed should be manually set to match the flash sync speed $^1/_{125}$ s, or $^1/_{1000}$ s with central shutter (see p. 21), or ⚡ or to slower speeds; there is no automatic adjustment. The flash ready and control displays are inactive.

REVIEW MODE

SELECTING PICTURE AND REVIEW MODES

When turned on, the Leica S is always in recording mode.

To review the pictures, you can choose between two modes:

- PLAY   Review for an unlimited time
- Auto Review.   Automatic review after each picture

REVIEW FOR UNLIMITED TIME – PLAY

Setting the function

Select normal review mode by briefly pressing button (1.21), regardless of whether this is done

- from recording mode, i.e. with the monitor turned off, or
- from the picture data display (4.1, see p. 12/26), or
- from Auto Review. mode.

- The last picture taken appears in the monitor, along with the corresponding displays (4.2.1 – 4.2.9) (see p. 13).

  However, if there are no picture files on the memory card(s) in use, when you switch to review mode the following message appears: No image to display.

AUTOMATIC REVIEW OF LAST PICTURE

In Auto Review. mode, each picture is displayed in the monitor (1.23) immediately after it has been taken. You can determine how long the picture is displayed for.

Setting the function

1. In the SETUP menu (see p. 17/26), select Auto Review (5.24),
2. Duration in the submenu, and
3. then the required function or time in the next submenu: (Off, 1 Second, 3 Second, 5 Second, Hold).

Notes:

- From Auto Review.-mode, you can switch to PLAY mode (see above) at any time.
- Even pictures that have not yet been transferred from the camera's buffer memory onto a card - the LED (1.20) is still flashing - can be viewed immediately.

  However, the pictures on the card cannot be accessed while data transmission is still in progress.
- The Leica S stores pictures in line with the DCF standards (Design Rule for Camera File System).
- The Leica S can only review pictures taken with Leica S cameras.
- If you save the picture data in JPEG and DNG format in parallel (see p. 32), the picture displayed is always based on the DNG file.
- If you are taking photographs using the series exposure or bracketing functions (see p. 36/40), the last picture in the series is shown first in both review modes. For details of how to select the other pictures in the series, see p. 58.

NORMAL REVIEW (4.1)

To ensure that the pictures can be viewed unobstructedly in the monitor, normal review only shows

- the information in the header (4.2.1 -4.2.6), and
- a symbol in the top right (4.2.7) that indicates whether the click wheel is set to scroll or zoom mode.
- If a detail is shown (see p. 58), a rectangle with an internal frame (4.2.8) also appears, indicating approximately to the position and size of the detail displayed.
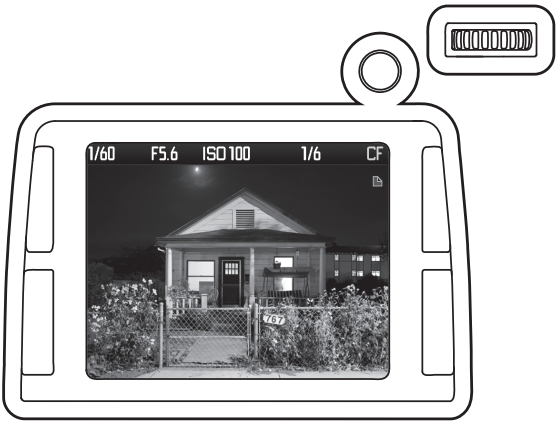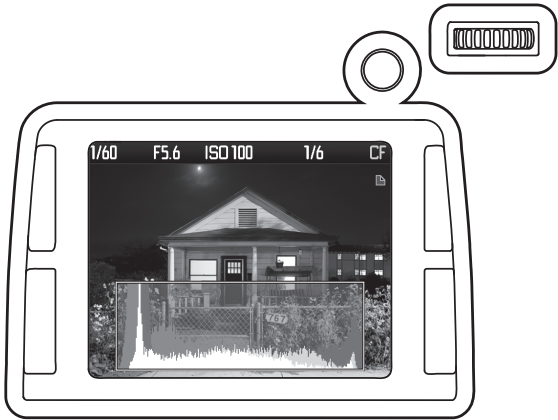

In addition to normal review, 3 other options with different additional information are available. All 4 can be selected in an endless loop.

REVIEW WITH HISTOGRAM (4.2)

In normal review mode, press the joystick (1.17) inwards once (starting from normal review) to also display the histogram (4.3.1).

• The histogram appears in the lower half of the picture.

Notes:

• The histogram is available both when reviewing the entire picture and when showing a detail (see p. 58), but not when simultaneously reviewing 4 or 9 smaller pictures (see p. 59).

• The histogram always relates to the detail of the picture currently displayed (see p. 58).

The histogram

You can choose between two types of histogram: Either related to the total brightness (Standard), or related to the 3 color channels red/green/blue (RGB).

Setting the function

1. In the SETUP menu (see p. 17/26) select, Histogram (5.25), and
2. then Standard or RGB in the submenu.

REVIEW WITH CLIPPING INDICATORS (4.3)

In normal review mode, press the joystick (1.17) inwards twice (starting from normal review) to display the areas that lack definition.

• Excessively bright areas are indicated in red, excessively dark areas in blue, flashing in each case. The clipping symbol (4.4.1) also appears in the bottom right.
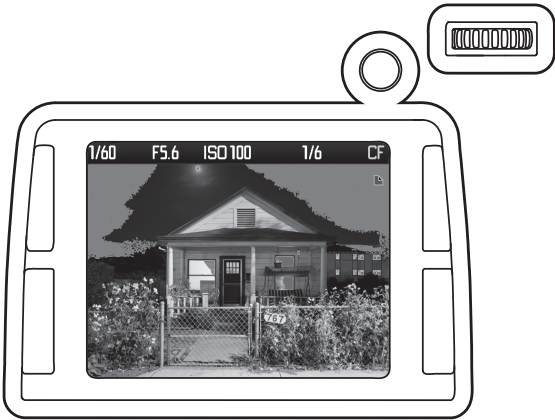
Notes:

• The clipping displays are available both when reviewing the entire picture and when showing a detail (see p. 58), but not when simultaneously reviewing 4 or 9 smaller pictures (see p. 59).

• The clipping displays always relate to the detail of the picture currently displayed (see p. 58).

Clipping displays

You can use the menu to set the clipping thresholds for displaying both the light and dark areas.

Setting the function

1. In the SETUP menu (see p. 17/26) select, Clipping-Setting (5.26), and
2. set the lower and upper threshold in the submenu.
   • The scale shows the clipping areas in relation to the total exposure range.

INFO REVIEW (4.4)

In normal review, press the joystick (1.17) inwards three times (starting from normal review mode) to display a whole range of additional picture data and a reduced image.
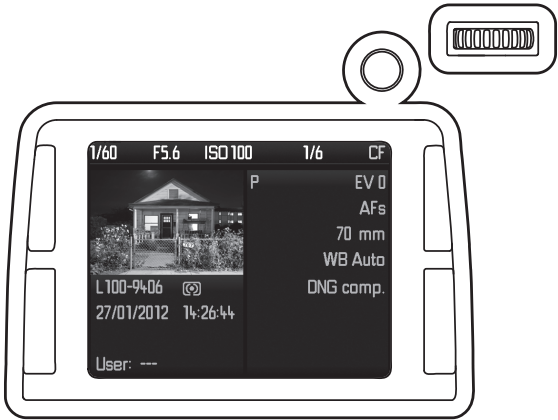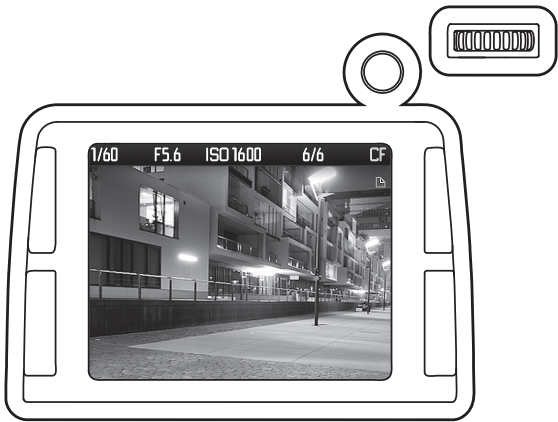

Note:

With this review option, the entire picture is displayed, regardless of whether a detail was previously selected.

VIEWING OTHER PICTURES / "SCROLLING" IN THE MEMORY

1. Briefly pressing the click wheel (1.18, ≤1s) switches between scroll and zoom mode.
   • The symbol in the top right shows the current mode, 🗋 for scroll, and Q for zoom.
2. If 🗋 is displayed, you can select other pictures by turning the click wheel.
   Turn to the left to select pictures with lower numbers, or to the right for higher numbers. When you reach the highest and lowest numbers, the series of pictures starts again in an endless loop, which means that can reach all pictures in both directions.
   • The picture and file numbers in the monitor change accordingly.

   Note:
   This can be done with all 4 review options (see p. 56/57), for every zoom level including off-center details (see below) and when viewing several smaller pictures simultaneously (see next page).

IMAGE REVIEW ZOOM IN
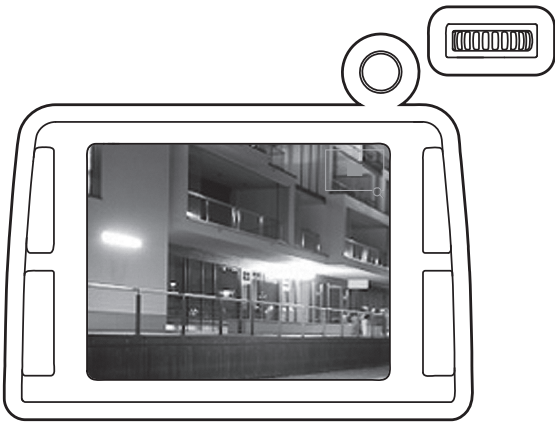
You can
- gradually zoom in
  or
- select the maximum possible zoom level.

Gradual zoom

1. Briefly pressing the click wheel (1.18, ≤1s) switches between scroll and zoom mode.
2. If Q is displayed, you can zoom in on the detail shown by turning the click wheel to the right. The more you turn the ring, the greater the enlargement and the smaller the detail. Four zoom levels are possible, until 1 pixel in the monitor shows 1 pixel in the picture.
   • The rectangle inside the frame (4.2.8) shows the size and position of the current detail.

Maximum zoom in one step

Pressing and holding the click wheel (≥1s) switches between review of the entire picture and maximum zoom.

Notes:
• This function is available in both scroll and zoom mode. It does not change the mode previously selected, i.e. turning the click wheel either displays the same detail of a different picture (with 🗋), or a lower zoom level (with Q).
• The function is available at every zoom level. If a detail was previously set, the first press initially displays the entire picture.
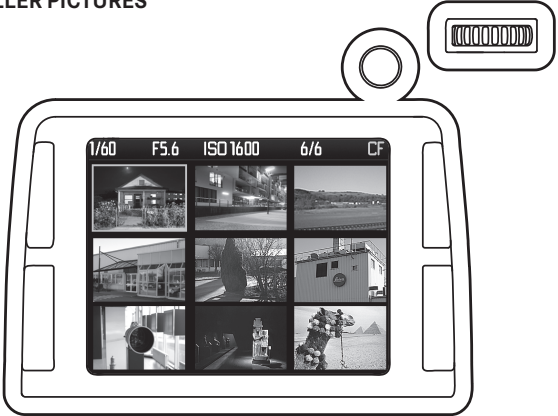
MOVING THE TRIMMING
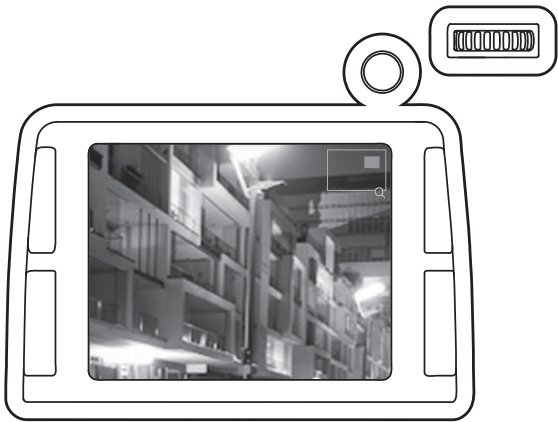
Press the joystick (1.17) in the desired direction - up, down, right, or left.
• The rectangle moves in the frame (4.2.8) in the direction you press.

SIMULTANEOUSLY VIEWING SEVERAL SMALLER PICTURES

If $\mathbf{Q}$ is displayed, <u>turning</u> the click wheel (1.18) to the left
- zooms out of pictures already enlarged,
  or turning beyond review of the entire picture
- simultaneously displays 4 or 9 pictures for review.
  • The green frame indicates
    - a single picture when viewing 4 or 9 (the one previously shown at full size),
   - all 9 pictures if you continue turning to the left.

SELECTING ONE OF THE SMALLER PICTURES
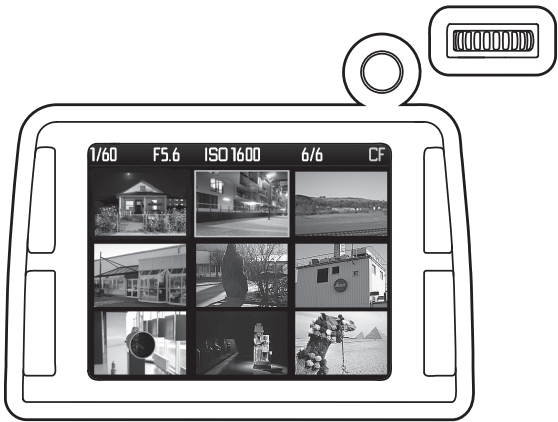
1. Press the click wheel (1.18) to activate the selection function.
   • The frame color changes from green to red.

2. By
   - turning the click wheel with a green frame, or
   - pressing the joystick up, down, left, or right with a red or green frame,
   you can select the other pictures.
   • If the frame is around a single picture, it switches from one picture to the next, line by line, in an endless loop; if it is around 9 pictures, it moves to the next group of 9, one block at a time.

3. Pressing the click wheel again deactivates the selection function.
   • The frame color changes back to green.

4. Turning the click wheel to the right again allows you to gradually zoom in on the framed picture again (see p. 58) or, by pressing and holding the click wheel (≥1s) you can return directly to normal review mode.

SWITCHING TO THE OTHER MEMORY CARD

1. Turn the click wheel (1.18) to the left beyond review of 9 pictures.
   • The selection menu appears in the monitor, with illustrations of the two cards. The currently active card is indicated by a green frame.
2. Pressing the click wheel activates the selection function.
   • The frame color changes from green to red.
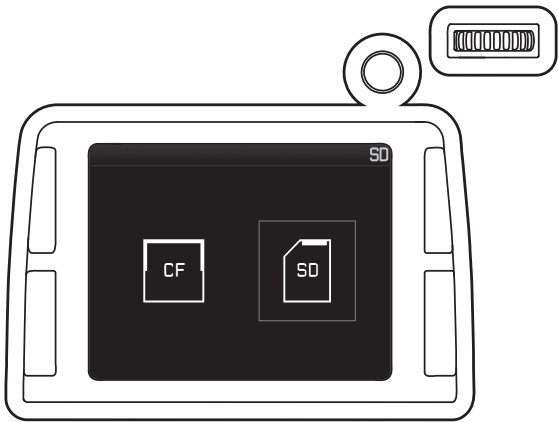
Notes:
• This is only possible if an appropriate card is inserted.
• This change of card only applies to the review mode, i.e. it does not change how the picture data is stored (see p. 35).

3. Turning the click wheel again allows you to switch from one card to the other.
   • The red frame switches between the cards accordingly.
4. Pressing the click wheel again deactivates the selection function, and activates the framed card.
   • The frame color changes back to green.

PROTECTING PICTURES / CLEARING DELETE PROTECTION
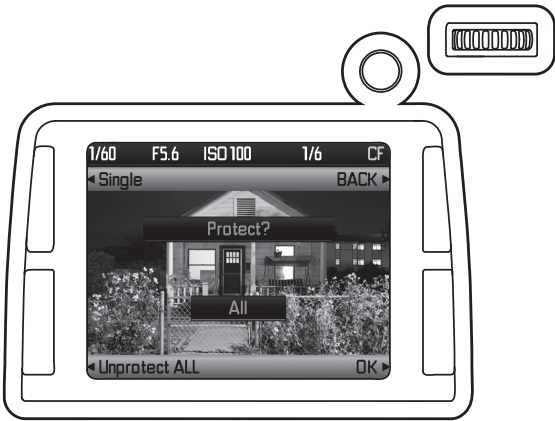
Note:
This function is not available in INFO review mode (4.5).

1. Press any of the four buttons (1.21, 1.22, 1.24, or 1.25).
   • The functions valid in this situation appear in the picture - for 5 s - next to the corresponding buttons - they are Protect, Delete and MENU.
2. Press the Protect button.
   • The image field shows:
     - the button functions valid in this situation - BACK, OK, Unprotect ALL, and All/Single (if the picture is already protected, Unprotect ALL appears instead of Protect ALL)
     - Protect? in the center and Single?/All? underlined in red for the functions activated
     - if applicable, the symbol (4.2.9) for a protected picture. In such cases, Unprotect? appears in the center instead of Protect?
3. Use button (1.25) to select whether you want to protect only the picture shown or all pictures, or whether you want to cancel the existing protection for only the picture shown or for all pictures.
   • The relevant displays change: Between All and Single next to the button and vice versa in the center.

Notes:
• If protection or canceling protection for single pictures is active, other pictures can be called up by turning the click wheel (1.18).
• You can use the BACK button (see above under 2.) to return to the normal view.
• You can use button (1.23) to switch directly to the menu for canceling protection or to return from that menu.

4. Press the OK button to start the protection process or to cancel the protection.
   • The symbol (4.5.7) for a protected picture appears in the monitor or disappears.

DELETING PICTURES

Note:
This function is not available in INFO review mode (4.5).
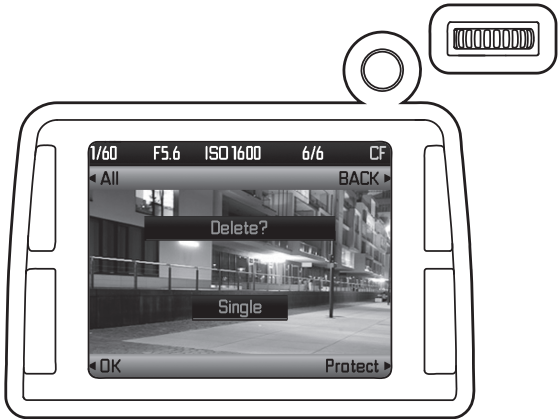
1. Press any of the four buttons (1.21, 1.22, 1.24, or 1.25).
   • The functions valid in this situation appear in the picture - for 5 s - next to the corresponding buttons - they are Protect, Delete and MENU.
2. Press the Delete button.
   • The image field shows
   - the button functions valid in this situation - BACK, Protect, OK and All/ Single
   - Delete? in the center and Single/All underlined in red for the activated functions
   - if applicable, the symbol (4.2.9) for a protected picture. In such cases, OK does not appear.
3. Use button (1.25) to select whether you want to delete only the picture shown or all pictures.
   • The relevant displays change: Between All and Single next to the button and vice versa in the center.

Notes:
• If deletion of single pictures is active, other pictures can be called up by turning the click wheel (1.18).
• You can use the BACK button (see above under 2.) to return to the normal view.
• You can use button (1.22) to switch directly to the menu for protecting pictures (see p. 60).

To delete only one picture
4. Press the OK button to start the delete process.
   • The next picture that has not been deleted appears in the monitor.
   If the picture deleted was the only one, the following message appears: No image to display

To delete all pictures
4. Press the OK button.
   • The following query appears in the monitor: Delete ALL pictures?

Note:
You can use the BACK button (see above under 2.) to return to the normal view.

5. Confirm and press the OK button to start the delete process.
   • The monitor shows the message: No image to display

Note:
Protected pictures are not deleted. After deleting, the last (highest number) of the remaining pictures appears.

ADDITIONAL FUNCTIONS

TRANSFERRING DATA TO A COMPUTER

The Leica S is compatible with the following operating systems:
Microsoft®: Windows® XP / Vista® / 7®
Apple® Macintosh®: Mac® OS X (10.5 or higher)
The Leica S is equipped with a USB 2.0 interface for transferring data to a computer. This allows fast data transfer to computers with the same kind of interface. The computer used must either have a USB port (for direct connection to the Leica S) or a card reader for CF or SD/SDHC/SDXC cards.

Note:
Connecting two or more devices to a computer or connecting using a USB hub or extension cables can result in malfunctions.

Via USB connection
The Leica S allows data to be transferred via a USB cable using two different standards. It thus takes accounts of the fact that some programs for transferring picture data require a connection complying with the PTP protocol.
In addition, it is always possible to operate the camera as an external drive ("bulk storage").

Setting the function
1. In the SETUP menu (see p. 17/26) select, USB Mode (5.21), and
2. then PTP or Mass Storage in the submenu.

CONNECTING AND TRANSFERRING DATA USING THE PTP PROTOCOL

If the Leica S is set to PTP and is detected by the connected computer, proceed as follows:

Note:
When transferring data using the PTP standard, all pictures on the memory card used are displayed on the computer, provided storage of the image data is set to Sequential or Parallel (see p. 35). By contrast, if External is set, no data is transferred.

In Windows® XP® / Vista® / 7®
3. Use the LEMO® USB cable supplied (D) to connect the LEMO® data output socket (1.33) on the Leica S to a free USB port on the computer. To do this, first open the cover (1.26) over the socket to the front.

In Windows® XP®
• After connecting, a message appears on the desktop to confirm that the Leica S has been detected as new hardware (1st connection only).

4. Double-click on the message (not necessary after the 1st connection).
   • A pull-down menu entitled "S Digital Camera" opens for the data transfer wizard.
5. Click on "OK" and follow the subsequent instructions in the wizard to copy the pictures to a folder of your choice and access them in the normal way.

In Windows® Vista®/7®
• After installation, a message appears above the taskbar to indicate that the device driver software is being installed.
  At the same time, USB Connection appears on the camera display.
  Successful installation is confirmed by a further message window.
  The "Autoplay" menu opens, with various device options.

4. You can use the Windows wizard to "Import Images" or "Open Device to View Files" in the normal way to
5. access the card directory structure using Windows Explorer.

In Mac® OS X® (10.5 or higher)
1. Use the LEMO® USB cable supplied (D) to connect the LEMO® data output socket (1.33) on the Leica S to a free USB port on the computer. First, the cover (1.26) over the socket on the camera must be opened to the front.
   • When a connection has been successfully established between the camera and the computer, USB-Verbindung appears on the camera display.
2. Now open the "Finder" on the computer.
3. In the left window, click on "Programs" in the "Locations" category.
4. Now select the "Digital Images" program in the right window.
   • The program opens and the name "S Digital Camera" appears in the program title bar.
5. The pictures can now be saved on the computer using the "Load" button.

CONNECTING AND TRANSFERRING DATA WITH THE CAMERA AS AN EXTERNAL DRIVE (BULK STORAGE)

In Windows® operating systems:

If the Leica S is connected to the computer using the LEMO® USB cable (supplied), it is detected as an external drive by the operating system and is assigned a drive letter. Use Windows® Explorer to transfer/save the image data to your computer.

In Mac® operating systems:

If the Leica S is connected to the computer using the LEMO® USB cable (supplied), the memory card used appears as a storage medium on the desktop. Use the Finder to transfer/save the image data to your computer.

Note:

As long as this function is active, all other camera functions are blocked.

Important:

• Only use the LEMO® USB cable (D) supplied.
• While data is being transferred from the Leica S to the computer, the connection may not under any circumstances be broken by removing the USB cable, as otherwise the computer and/or the Leica S may crash, and the memory card may even be irreparably damaged.
• The Leica S should not be turned off or be allowed to automatically switch itself off due to a lack of battery power while data is being transferred from the camera to the computer, as this may cause the computer to crash. For the same reason the battery must never be removed from the camera while the connection is active. If the battery capacity is about to run out during data transfer, stop the data transfer, turn off the Leica S (see p. 25) and charge the battery (see p. 18). p. 18).

CONNECTING AND TRANSFERRING DATA USING CARD READERS

The image files can also be transferred to a computer using a standard card reader for CF or SD/SDHC/SDXC memory cards. These devices, and further information about them, is available from a computer accessory dealer.

DATA STRUCTURE ON THE MEMORY CARD

Up to 9999 pictures can be stored in the **100LEICA-**, **101LEICA-** etc. folders.

ADOBE® PHOTOSHOP® LIGHTROOM®

Adobe® Photoshop® Lightroom® is available as a free download when you register your Leica S on the Leica Camera AG home page. Further details can be found in the "Owners' Login" area at: https://owners.leicacamera.com.

LEICA IMAGE SHUTTLE

The exclusive LEICA Image Shuttle software enables you to remotely control the camera from a computer and to directly store the image data on the computer's hard drive for "tethered shooting". All of the key camera functions can be controlled. This convenient solution provides ideal support in the studio and on location.

Leica Image Shuttle is available as a free download when you register your Leica S on the Leica Camera AG home page. Further details can be found in the "Owners' Login" area at: https://owners.leicacamera.com.

SYSTEM REQUIREMENTS

Microsoft® Windows® Vista® / 7®; Mac® OS X 10.6 or higher

On some Windows versions, it is possible that the operating system will issue a warning about a missing Windows signature. Ignore this message and continue with the installation.

INSTALLING FIRMWARE UPDATES

Leica is constantly working on developing and optimizing its products. As digital cameras have many functions that are controlled electronically, some of these improvements and enhancements to the functions can be installed on the camera at a later date.

Leica provides firmware updates at irregular intervals for this purpose. Information about any resulting changes or additions to the details in these instructions can be found at: http://www.s.leica-camera.com/down-loads-overview

You can check whether your camera is running the latest firmware version by selecting the Firmware (5.41) option in the menu (see also p. 17 and 26 to 29).

You can easily download new firmware from our home page and transfer it to your camera:

1. Format a memory card in your Leica S.
2. Turn off the camera and insert the card into a card reader – either integrat-ed or connected to your computer.
   (A reader is required for firmware updates).
3. Download the firmware file from
   "https://owners.leica-camera.com/login".
4. Save the file S-X_xxx.FW at the top level of the card folder structure. X_xxx stands for the relevant version.
5. Remove the card properly from your card reader, insert the card into the camera and close the cover. Hold down the joystick inwards forwards and turn on the camera with the main switch (1.15).

The update process begins. This may take several minutes.
After a successful update, a corresponding message appears as confirma-tion.

Note:
If the battery does not have sufficient charge, you will see a corresponding warning message.

HDMI SLIDE SHOW

With the Leica S you can view the saved pictures at any size and in excellent quality via an HDMI cable connection using external playback equipment.

Setting the function

1. In the SETUP menu (see S. 17/26), select HDMI (5.22),
2. Resolutuion in the submenu, and
3. then the required format or the automatic setting.

Note:
For optimum playback quality, 1080p should be selected.

4. Select Slideshow in the first submenu.
5. Select Select Images in the next submenu.
   • The image field shows
   - the button functions valid in this situation - BACK, – OK , Discard ALL and All/Single, Select ALL for the button functions valid in this situation
   - Select? in the center and - Single /ALL for the activated functions, and
   - if applicable the symbol (4.6.7) for a picture already selected.

To select only one picture
6. Press the OK button.
   • The symbol (4.6.7) appears in the monitor.

To select all pictures
6. Use button (1.25) to select whether you want to delete only the picture shown or all pictures.
   • The relevant displays change: Between All and Single next to the button and vice versa in the center.
7. Confirm with the OK button.
   • The LED (1.21) flashes during the processing time, and the symbol (4.6.7) then appears in the monitor.

Note:
The BACK button takes you back to step 4.

To undo a selection
6. Press the OK button.
   • The displays (4.6.5) and (4.6.3) change
7. The subsequent procedure is exactly the same as that described above for selecting pictures.
   • The symbol (4.6.7) disappears for the relevant pictures.

8. Select Duration in the first submenu, and
9. select the required time or Manual if you want to change pictures yourself.
10. Finally, select Start Show in the first submenu to start the slide show.
    • Field (4.6.3) shows END, field (4.6.2) BACK, field (4.6.4) OK, and there is a message indicating that the slide show is running.
11. Other pictures can be selected either
    - using the BACK- and OK buttons, or
    - using the click wheel (1.18) in exactly the same way as for viewing on the monitor.

Note:
Even if the pictures are set to change automatically after a specified time, you can call up the previous/next picture manually at any time.

12. The slide show can be stopped at any time by pressing the END button.

Notes:
• If the Auto Power Off function is activated (see p. 30), a slide show in prog-ress is stopped after the set time.
• During a slide show, you can take a new picture at any time by fully pressing the shutter release button to the 3rd pressure point (see p. 36).

MISCELLANEOUS

SYSTEM ACCESSORIES

INTERCHANGEABLE LENSES
The range of interchangeable lenses in the Leica S system includes focal lengths from wide angle to the telephoto range, including a macro lens for close-up pictures. Some models are available with an optional integral central shutter - for flash pictures with sync speeds of up to $^1/_{1000}$s. All Leica S lenses are extremely fast - with respect to the picture format, and all deliver outstanding image performance.

LEICA S ADAPTERS
Leica S adapters allow lenses from other manufacturers to be used on Leica S cameras. The three purely mechanical bayonet adapters do not transfer any mechanical or electrical controls, signals or data between the body and the lens.
There is also another Leica S adapter for using Hasselblad HC/HCD lenses on Leica S cameras, which allow all the functions of these lenses to be used.

Leica S adapter V
(for lenses from the Hasselblad V system, order no. 16 024)
Leica S adapter M645
(for lenses from the Mamiya 645 system, order no. 16 025)
Leica S adapter P67
(for lenses from the Pentax 67 system, order no. 16 026)
Leica S adapter H
(for lenses from the Hasselblad H system, order no. 16 030)

INTERCHANGEABLE FOCUSING SCREENS
There are three focusing screens for the Leica S:
- Uniform ground glass screen
  (standard, included with camera, order no. 16 000)
- Uniform ground glass screen with grid division
  (order no. 16 002).
- Ground glass screen with micro-prism ring and split-image wedge
  (order no. 16 001)
The focusing screens are supplied separately in a container with tweezers and a dust brush.

LEICA SF 58
With a maximum guide number of 58 (for ISO 100 and 105mm setting), an automatically controlled zoom reflector, an optional second reflector and many other functions, the Leica SF 58 system flash unit is both powerful and versatile. Thanks to its additional control and signal contacts, which are used to automatically transfer a range of data and settings, it is very easy to use.
(Order no. 14 488)
The additional diffuser screen available allows you to achieve soft illumination, which covers the angle of view of an 18mm lens due to the greater dispersion of the light.
(Order no. 14 489)

MULTI-FUNCTION HAND GRIP S
Thanks to its shape and conveniently positioned controls, the multi-function hand grip makes it much easier to take portrait format pictures. It also allows an additional battery to be used to extend the capacity. It is quick and easy to attach using a tripod screw.
(Order no. 16 028)

GRIP STRAP S
The grip strap S is attached to the Multi-Function Hand Grip S and makes it much easier to carry and hold the camera/hand grip combination. (Order no. 16 004)

PROFESSIONAL CHARGER S
The S Pro charger allows you to significantly increase or safeguard the availability of your Leica S system. It can charge two batteries simultaneously.
(Order no. 16 011)

AC-ADAPTER S
If the Leica S is used in a fixed location and/or for a very large number of pictures over a longer period, particularly if it is or cannot be monitored during this time, it may be useful to ensure a continuous power supply to the camera by using the mains adapter S.
(Order no. 16 022)

REMOTE RELEASE CABLE S
The electric remote release cable S is ideal if you require the maximum possible freedom from blurring.
(Order no. 16 029)

HDMI CABLE
The HDMI cable allows exceptionally fast transfer of picture data to playback equipment with corresponding HDMI sockets. Length = 1.5m (Order no. 14 491 / 14 492 [Jp/Tw])

REPLACEMENT PARTS   Order no.
Camera bayonet cap...16 021
Carrying strap 16 006
Standard focusing screen 16 000
Viewfinder cover...16 015
Lithium ion battery...14 429
Battery charger S (with integrated US mains connector and
EU, UK and AUS power plugs and car charging cable) 16 009
LEMO® sync cable 16 031
LEMO® USB cable 16 014

PRECAUTIONS AND CARE INSTRUCTIONS

GENERAL PRECAUTIONS

Do not use your Leica S in the immediate vicinity of devices with powerful magnetic, electrostatic or electromagnetic fields (e.g. induction ovens, microwave ovens, television sets or computer monitors, video game consoles, cell phones, radio equipment).

- If you place the Leica S on or very close to a television set, its magnetic field could interfere with picture recordings.
- The same applies for use in the vicinity of cell phones.
- Strong magnetic fields, e.g. from speakers or large electric motors, can damage the stored pictures.
- If the Leica S is not working correctly due to the influence of electromagnetic fields, turn it off, remove the battery, then replace the battery and turn it back on.
  Do not use the Leica S in the immediate vicinity of radio transmitters or high voltage cables.
- Their electromagnetic fields can also interfere with picture recordings. Protect the Leica S from contact with insect sprays and other aggressive chemicals. Petroleum, thinner and alcohol should not be used for cleaning.
- Certain chemicals and liquids can damage the Leica S body or the surface finish.
- As rubber and plastics sometimes emit aggressive chemicals, they should not remain in contact with the Leica S for long periods.
- The Leica S has a range of design features to provide a certain amount of protection against moisture and dust. Nevertheless, you should ensure that neither water nor sand and dust can get into the camera body, e.g. when it is snowing or raining and on the beach.

- Sand and dust can damage the camera and memory cards. Pay particular attention when changing lenses and when inserting and removing the memory cards.
  If any moisture does get in, this can cause malfunctions and even irreparable damage to the Leica S and the memory cards.
  If salt water spray gets onto the Leica S, moisten a soft cloth with tap water, wring it out thoroughly and wipe the camera with it. Then wipe down thoroughly with a dry cloth.

MONITOR AND TOP PANEL DISPLAY

- If the Leica S is exposed to significant temperature fluctuations, condensation can form on the displays. Wipe them carefully with a soft dry cloth.
- If the Leica S is very cold when it is turned on, the displays may at first appear darker than usual. As soon as they warm up, they achieve their normal brightness.
- The monitor is manufactured using a high precision method. This ensures that, of the total of around 921,600 pixels, more than 99.995% work correctly and only 0.005% remain dark or are always light. However, this is not a malfunction and it does not impair the reproduction of the picture.

SENSOR

Cosmic radiation (e.g. on flights) can cause pixel defects.

CONDENSATION

If condensation has formed on or in the Leica S, you should turn it off and leave it to stand at room temperature for around an hour. Once the camera temperature has adjusted to room temperature, the condensation will disappear by itself.

CARE INSTRUCTIONS

- As any soiling also represents a growth medium for microorganisms, you should take care to keep the equipment clean.

FOR THE CAMERA

- Only clean the Leica S with a soft, dry cloth. Stubborn dirt should first of all be covered with a well-thinned cleaning agent and then wiped off with a dry cloth.
- To remove stains and fingerprints, the camera and lens should be wiped with a clean lint-free cloth. Tougher dirt in hard to reach corners of the camera body can be removed with a small brush. Be careful not to damage the shutter blades and mirror surface, for instance with the shaft of the brush.
- All mechanically operated bearings and sliding surfaces on your Leica S are lubricated. Please remember this if you will not be using the camera for a long period of time. To prevent the lubrication points becoming gummed up, the camera shutter should be released a number of times every three months. It is also recommended that you repeatedly move and use all other controls.

FOR LENSES

- Dust on the outer lenses should be removed with a soft hair brush or carefully using a clean, dry, soft microfiber cloth. To remove marks or fingerprints, wipe the lens carefully with such a cloth starting in the middle and working towards the edge in a circular motion. The Leica Aquadura® coating makes it easy to clean. Do not exert excessive pressure, to maintain this property for as long as possible. Never use acetone for cleaning.
- For optimum front lens protection in unfavorable photographic conditions (e.g. sand, salt water spray), use transparent UVa filters. However, you should bear in mind that, like all filters, they can cause unwanted reflections in certain backlight situations and with high contrasts. The generally recommended lens hood also protects the lens from unintentional fingerprints and the rain.

FOR THE BATTERY

Rechargeable lithium ion batteries generate power through internal chemical reactions. These reactions are also influenced by the external temperature and humidity. Very high or low temperatures reduce the life of the battery.

- Always remove the battery if you will not be using the Leica S for a long period of time. Otherwise, after several weeks the battery could become totally discharged, i.e. the voltage is significantly reduced, as the Leica S uses a low no-load current (to save the date and time) even when it is turned off.
- Lithium ion batteries should only be stored in a partially charged condition, i.e. not completely discharged or fully charged (indicated in the top panel display (1.12)), If stored for very long periods, it should be charged up and discharged again around once a year.
- Always ensure that the battery contacts are clean and freely accessible. While lithium ion batteries are proof against short circuits, they should still be protected against contact with metal objects such as paper clips or jewelry. A short-circuited battery can get very hot and cause severe burns.
- If a battery is dropped, check the casing and the contacts immediately for any damage. Using a damaged battery can damage the Leica S.
- Batteries have only a limited service life.
- Take damaged batteries to a collection point to ensure correct recycling.
- Never throw batteries into a fire as this can cause them to explode.

FOR THE CHARGER

- If the charger is used in the vicinity of radio receivers, it can interfere with the reception; make sure there is a distance of at least 1m between the devices.
- When the charger is in use, it can make a noise (buzzing) – this is quite normal and is not a malfunction.
- When it is not in use, disconnect the charger from the mains as otherwise it uses a certain (very small) amount of power even when no battery is inserted in it.
- Always keep the charger contacts clean, and never short circuit them.

FOR MEMORY CARDS

- While a picture is being stored or the memory card is being read, it should not be removed, nor should the Leica S be turned off or exposed to vibrations.
- For safety, memory cards should only ever be stored in the supplied antistatic container.
- Do not store memory cards where they will be exposed to high temperatures, direct sunlight, magnetic fields or static discharge.
- Do not drop or bend memory cards as this can damage them and result in loss of the stored data.
- Always remove the memory cards if you will not be using the Leica S for a long period of time.
- Do not touch the terminals on the memory card and keep them free of dirt, dust and moisture.
- It is recommended that memory cards be reformatted from time to time, as fragmentation occurs when deleting, which can block some of the memory capacity.

CLEANING THE SENSOR

If any dust or dirt particles should adhere to the sensor cover glass, depending on the size of the particles this can be identified by dark spots or marks on the pictures.

The Leica S can be sent to Leica Camera AG's Customer Care department for the sensor to be cleaned at a cost (address: see p. 74) – this cleaning is not included in the warranty.

You can also perform the cleaning yourself, using the Sensor Cleaning function in the menu. This allows access to the sensor by keeping the shutter open.

Notes:
- Generally: To protect the Leica S against ingress of dust etc. into the interior of the camera, it is important always to have a lens or a cover attached to the camera body.
- For the same reason, change lenses quickly and in an environment that is as dust-free as possible.
- As plastic parts can easily pick up a static charge and then attract more dust, individual lens caps and covers should only be stored for short periods in pockets in clothing.

Setting the function

1. In the SETUP menu (see p. 17/26) select Sensor Cleaning (5.23).
   - The relevant submenu appears.
2. Confirm the function in the submenu, if there is sufficient battery capacity, i.e. at a minimum of 60%.
   - The message Please switch off camera after inspection. appears.

Note:

However, if the battery capacity is lower, the warning message Attention – Battery too low for sensor cleaning appears instead to indicate that the function is not available, i.e. Yes cannot be selected

3. Press the shutter release button (1.1). The shutter opens and remains open.
4. Perform the cleaning. Make sure you follow the instructions under "Notes".
5. After cleaning, the shutter is closed by turning off the camera.
   - The message Attention – Please stop sensor cleaning immediately appears.

Notes:
- As far as possible, both inspection and cleaning of the sensor should be performed in a dust-free environment to prevent further soiling.
- An 8x or 10x magnifying glass is very useful for the inspection and after cleaning.
- Lightly adhering dust can be blown off the sensor cover glass using clean and, if necessary ionized gases such as air or nitrogen. It makes sense to use a (rubber) bellows with no brush for this purpose. Special, low pressure cleaning sprays such as "Tetenal Antidust Professional" can also be used in line with their specified usage.
- If the particles cannot be removed from the sensor in this way, please refer the matter to your Leica Information Service (address: see p. 74).

- If the battery capacity falls to less than 40% while the shutter is open, a warning message "Attention Please stop sensor cleaning immediately."
" appears on the monitor. At the same time a sustained beep tone will sound, which continues until the camera is switched off. Turning off also closes the shutter.

Be absolutely sure in this case that the shutter widow is clear, i.e. that no object can obstruct the closing movement of the shutter, otherwise damage may occur!

Important:
- Leica Camera AG accepts no liability for damage caused by the user when cleaning the sensor.
- Do not attempt to blow dust particles off the sensor cover glass using your mouth; even tiny droplets of saliva can cause marks that are difficult to remove.
- Compressed air cleaners with high gas pressure may not be used as they can also cause damage.
- Take care to avoid touching the sensor surface with any hard objects during inspection and cleaning.

STORAGE

- If you will not be using the Leica S for a long period, we recommend
  a. turning it off (see p. 25),
  b. removing the memory cards (see p. 21), and
  c. removing the battery (see p. 21), (the set date and time will be lost after a maximum of 3 months, see p. 30).
- A lens works like a magnifying glass if bright sunlight shines on the front of the camera. The camera must therefore never be set aside in strong sunlight without protection. Use the lens cap and keep the camera in the shade (or immediately put it away in the case) help to prevent damage to the interior of the camera.
- Store the Leica S in a dry, adequately ventilated place, where neither high temperatures nor high humidity will occur. When used in humid conditions, the Leica S should be completely cleared of all moisture before being stored away.
- Photo cases that became wet during use should be emptied to prevent damage to your equipment caused by moisture and any leather-tanning residue released.
- To prevent fungal growth during use in hot, humid tropical climates, the camera equipment should be stored in airtight containers for the shortest time possible. This is only recommend if a desiccant such as Silica gel is used.
- To prevent the formation of fungus, do not store the Leica S in a leather case for extended periods of time
- In dry surroundings, you should preferably store the Leica S in a closed and padded container so that nothing can damage it and it is protected from dust.
- Note the serial numbers of your Leica S and lenses, as these are extremely important in case of loss.

INDEX

TECHNICAL DATA

Camera type   Leica S (Typ 006) Digital medium format reflex camera
Lens connection   Leica S bayonet
Lens system   Leica S lenses

Picture format / Aspect ratio   30 x 45mm / 2:3
Image sensor / Resolution   Low noise CCD sensor with 6µm pixel pitch, with micro-lenses and micro-lens shift / 7500 x 5000 (37.5MP)
Dynamic range   12 stops
Color depth   16Bit
Low pass filter   None, for maximum transmission of sharpness, suppression of Moiré by external digital processing
IR filter   On sensor
Data formats   DNG (raw data, uncompressed or loss free compression), DNG + JPEG fine, DNG + JPEG basic, JPEG fine, JPEG basic.
DNG/JPEG resolution DNG: 37.5MP, JPEG: 37.5MP, 9.3MP, 2.3MP
File size DNG: Approx. 72/42 MB (uncompressed/compressed),
JPEG: Approx. 1-16 MB (depending on resolution/compression used and picture content)
Buffer memory   2GB, maximum number of pictures in series (depending on memory card used): DNG uncompressed/compressed: maximum 28/32, JPEG: unlimited
Color space   Adobe® RGB, sRGB, ECI RGB V2
White balance   Automatic, manual, 8 presets, color temperature metering
Storage medium   CF cards (max. UDMA7), SD cards up to 2GB, SDHC cards up to 32GB, SDXC cards
Menu languages   German, English, French, Spanish, Italian, Japanese, traditional Chinese, simplified Chinese, Russian
Compatibility   Windows® XP / Vista® / 7®; Mac® OS X (10.5 and higher)

Exposure control
Exposure metering   Open aperture metering through the lens (TTL)
Metering methods   Spot (3.5%), center weighted, multiple field metering (5 fields)
Metering memory lock   Pressing shutter release button to pressure point, storing for 1 picture or continuously using joystick
Exposure compensation   ±3 EV (exposure values), adjustable in half steps
Bracketing   Choice of 3 or 5 pictures, with choice of $^1/_2$ EV, 1EV, 2EV, 3EV variation between individual pictures, change of exposure produced by aperture and/or shutter speed depending on set exposure mode
Metering range   (at f/2.5 and ISO 100) Spot metering: EV2,1 - 20, center-weighted and multiple field metering: EV1,1 - 20, warning display in viewfinder for values above/below metering range, measuring cell for available light: multiple field photo diode (continuous light measurement)
Sensitivities   ISO100, ISO200, ISO400, ISO800, ISO1600, Automatic
Exposure modes   Automatic program with shift function (P), aperture priority (A), shutter speed priority (T), manual setting (m)

Flash exposure control
Flash unit connections   Accessory shoe with center and control contacts, LEMO® or standard flash connecting socket without output control
Synchronization   Flash sync speed: ⚡ $^1/_{125}$ s, or $^1/_{1000}$ s for lenses with central shutter, slower shutter speeds available, choice of start or end of exposure; flash with faster shutter speeds ($^1/_{180}$ s – $^1/_{4000}$ s) also possible with flash units with corresponding features (HSS mode)
Flash measuring cell   Multiple field photo diode
Flash exposure metering / control (with Leica SF 58 or system-compatible flash units, mounted on camera) Control by flash unit with TTL pre-flash metering, with automatic transmission and consideration of sensitivity and set/controlled lens aperture, all exposure modes available, automatic adaptation of flash light component to available light

High speed sync mode   (with Leica SF 58 or system-compatible flash units, with TTL pre-flash metering and automatic TTL HSS control) For flash photography with faster shutter speeds than the sync time by emitting several flashes in rapid succession, automatic switch to TTL HSS mode (with TTL HSS mode on the flash unit) if sync speed is not reached
Strobe flash mode   (multiple flashes fired during one exposure) Automatic adjustment of exposure time in P and A exposure modes and with system compatible flash units with appropriate features
Flash exposure compensation   Can be set on flash units with appropriate features (Leica SF 58: ±3EV in $^1/_3$ EV steps)
Displays in flash mode   Ready status indicated by flashing or constant illumination of flash symbol in viewfinder
Flash reflector illumination angle   Automatic adaptation to the focal length used with Leica SF 58 or system-compatible flash units with motorized zoom reflector

Focusing

Focus detection   Using phase detection method
Sensor / Metering field   Central cross sensor, defined by cross hairs on ground glass screen
Modes   Choice of **AFs** (single) = Sharpness priority, **AFc** (continuous) = Shutter release priority, **MF** (manual), Manual override of automatic setting possible at any time
Metering memory lock   Pressing shutter release button to pressure point, storing for 1 picture or continuously using joystick
Drive   In lenses
Displays   See p. 10

Viewfinder system

Eyepiece   High eye point viewfinder, diopter compensation from -3 to +1dpt. adjustable on viewfinder
Focusing screens   Interchangeable, 3 models available: Ground glass screen with micro-prism ring and split-image wedge (standard), ground glass screen with cross hairs, ground glass screen with grid division.
Viewfinder field   98%
Magnification   0.87x with 70mm lens set to infinity and 0 dpt.

Displays

Viewfinder   LCD line below viewfinder image, for displays see p. 10
Top panel   Colored, self-illuminating OLED (Organic Light Emitting Diode), for displays see p. 11
Monitor   3"color TFT LCD monitor with 16 million colors and 921.600 pixels, approx. 100% image field, max. 170° angle of view, anti-reflection/dirt protective glass Color space: sRGB, for displays see p. 12

Shutter and shutter release

Shutter   Selectable using main switch, in camera: Microprocessor-controlled metal blade focal plane shutter with vertical movement, in Leica CS lenses with appropriate feature: Central shutter
Shutter speeds   Manual setting (in **T** and **m**): 6s to $^1/_{4000}$s in half steps (6-$^1/_{1000}$s with central shutter), **B** for long time exposures up to maximum 125s, flash synchronization up to $^1/_{125}$s ($^1/_{1000}$s with central shutter) Automatic setting (in **P** and **A**): continuous from 32s to $^1/_{4000}$s (8-$^1/_{1000}$s with central shutter)
High speed sync flash with all faster shutter speeds than $^1/_{125}$s possible (with Leica SF58 and HSS compatible, SCA 3002 standard flash units)
Series exposures   Approx. 1.5 fps, max. 32/28 pictures in series with DNG compressed/uncompressed, unlimited with JPEG
Shutter release button   Three positions: Exposure and focus metering on – Metering memory lock – Shutter release
Self-timer   Delay time either 2 or 12s, indicated by flashing LED on front of camera and corresponding display in monitor
Mirror pre-release   1st release: pivoting mirror flips up, lens aperture closed to set value, 2nd release: Shutter is tripped

Turning camera on / off   With main switch on top left back of camera, optional auto switch off after approx. 2/5/10 minutes
Power supply   1 lithium ion battery, rated voltage 7.4V, capacity 2100mAh, remaining capacity indicated in top panel display, number of pictures to CIPA standards
Charger   Inputs: 100-240 V AC, 50/60Hz, automatic switching, or 12/24V DC; Output: 7.4V DC, 1250mA.

GPS   Selectable (not available everywhere due to country-specific legislation, i.e. automatic forced deactivation in some locations), data written to EXIF header of image files.
Spirit level   Measured by acceleration sensor, measuring range: Inclination (about transverse axis) and tilt (about longitudinal axis) each ±90°, measuring accuracy / display sensitivity: ≤1° at 0-40°C, display in monitor

Camera body

Material   Cast magnesium solid metal chassis with non-slip plastic finish, magnesium top panel, fiberglass reinforced polycarbonate base.
Tripod thread   A $^1/_4$ ($^1/_4$") DIN and A $^3/_8$ ($^3/_8$") DIN (steel inserts) each with locking mechanism complying with DIN 4503, in metal tripod plate, central under lens axis
Operating conditions   0 to +45°C /32°-113°F, 15%-80% humidity
Interfaces   ISO flash shoe, standard flash connecting socket, HDMI socket type C, 4-pin LEMO® socket for data output (USB 2.0 standard), 7-pin LEMO® socket for remote control accessories / remote flash firing, contact strip for multi-function hand grip S
Dimensions   (Width x Depth x Height)   Approx. 160 x 80 x 120mm / 65/16 x 35/32 x 43/4"
Weight   Approx. 1260g /2lb 12.4oz (with Battery)

Items supplied   Charger 100-240V with integrated US mains plug, interchangeable mains plugs (Euro, GB, AUS) and car charging cable, lithium ion battery, LEMO® USB cable, LEMO® sync cable, carrying strap, bayonet cover, eyepiece cover, software: Leica Image Shuttle, Adobe® Photoshop® Lightroom® (can be downloaded after registering the camera on the Leica Camera AG home page, see p. 63)

Subject to changes to design, manufacture and range.

LEICA INFORMATION SERVICE

Should you have any technical questions regarding the use of Leica products or the software included in some cases, the Leica Information Service will be happy to answer in writing or by phone, fax, or email.

They are also your contact if you need advice concerning an acquisition or if you would like us to send you instructions. Alternatively, you can also send us your questions through the contact form on the Leica Camera AG homepage (see previous page).

Leica Camera AG
Product Support / Software Support
Am Leitz-Park 5
D-35578 Wetzlar
Telefon: +49(0)6441-2080-111 /-108
Telefax: +49(0)6441-2080-490
info@leica-camera.com / software-support@leica-camera.com

LEICA CUSTOMER SERVICE

For servicing your Leica equipment or in the event of damage, the Leica Camera AG Customer Care department or the repair service provided by authorized Leica agents in your country are available (see the Warranty Card for a list of addresses).

Leica Camera AG
Customer Care
Am Leitz-Park 5
D-35578 Wetzlar
Telefon: +49(0)6441-2080-189
Telefax: +49(0)6441-2080-339
customer.care@leica-camera.com